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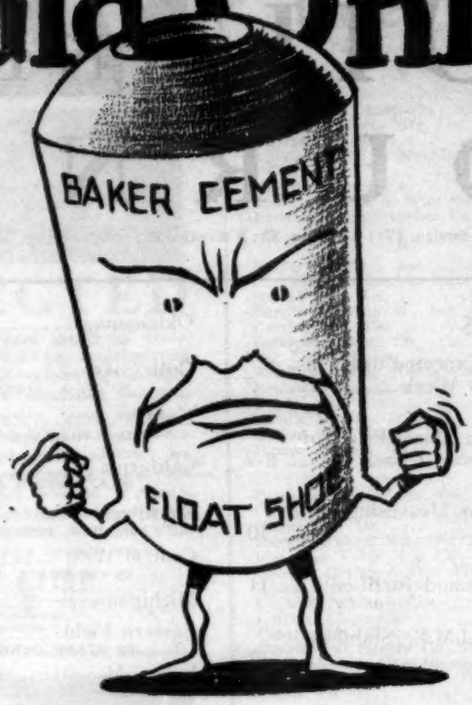
If I Could Only Talk

I'd tell you things



you ought to know

OUR whole outfit has been trying for years and years to tell you how good I am, and while a lot of other folks must have listened and been convinced, it seems that you, and you, and you still feel that I'm not absolutely necessary.

Mister, let's have an understanding before ol' Lady Luck forgets to smile on you one of these days and you shoot a seven when your point was nine!

Maybe you wonder why Baker don't sell me for the same price as other Float Shoes. They can't, because I'm worth more—worth more than any other kind—and I'll tell you why ▲ ▲ ▲

In the first place, I'm strong—like my whole family—stronger than your casing, because I'm made of a special concrete and inside me there's a Bakelite ball which seals against rubber and Bakelite seats.

And, Mister, there's no foolin' about my holding tight against any pressure.

I let the cement pass down easily, but when the pumps stop, that floating Bakelite ball pops up against the rubber and Bakelite seats and your cement stays put.

But it's when you go to drill me out that I'm worth a carload of ordinary Float Shoes, Float Collars and Guide Shoes. I'm a strong, tough feller until the bit starts drilling thru me. Then I give up easy, crumble to pieces and am soon in the slush pit ▲ ▲ ▲

▲ ▲ ▲ and there you are, with the hole all ready for coring or drilling, without any cracks in your cement job and no chunks of metal left to hold up the bit or start a crooked hole.

There's more you ought to know, so why not ask Baker to send you all the dope? They'll send it free, fast and frequent.

And I wouldn't put off writing, either

BAKER OIL TOOLS, INC.

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COALINGA ▲ TAFT ▲ HOUSTON ▲ OKLAHOMA CITY ▲ TULSA ▲ NEW YORK CITY

Crude Oil Prices in Mid-Continent Expected to Be Increased 25 Cents a Barrel This Week

By ANDREW M. ROWLEY

A FURTHER advance in crude oil prices in the Mid-Continent area, probably approximating 25 cents a barrel, is expected to be announced this week, possibly on Wednesday, September 6. Such an increase would be a long step towards the basic price of $1.11 per barrel for 36 gravity Mid-Continent crude which it is expected the government will establish in the very near future.

Crude oil prices in other areas throughout the United States will be increased in relation to the $1.11 basic Mid-Continent price, differentials which have prevailed heretofore being followed as closely as possible. Gasoline prices already are strengthening to a very marked degree and while the $1.11 crude price will not be based on the ratio of 18.5 times the Group 3 price for 60-64 octane gasoline it is felt the ratio will prevail to a fairly close degree. In other words, it is believed the same ratio will be carried out approximately but will be in relation to the base price of the raw material instead of determining the price of crude oil from the price of the finished product.

Curtailment of crude oil production to quotas allocated by the government, so necessary to stabilization of the industry and the holding of the higher prices, will be delayed in Texas, the main producing area because the Railroad Commission there states it is necessary to give 10 days' notice for a hearing on new proration schedules for the different fields. The Commission has asked the administration to stay the effective date of the production allocation order until September 16 when the state proration hearing will be held. Other states are expected to take quick action in meeting their quotas.

Production must be curtailed to the quotas allocated by the government or the higher prices generally agreed upon cannot stand. Texas operators will benefit greatly under the government's order. It is estimated an increase in price in Texas of about 13 cents a barrel will give operators there the same amount of money for production under the quota set by the government as they are receiving now for 300,000 barrels daily more output. Under a base price of $1.11 for 36 gravity Mid-Continent crude, prices in Texas probably would be advanced more than 13 cents a barrel.

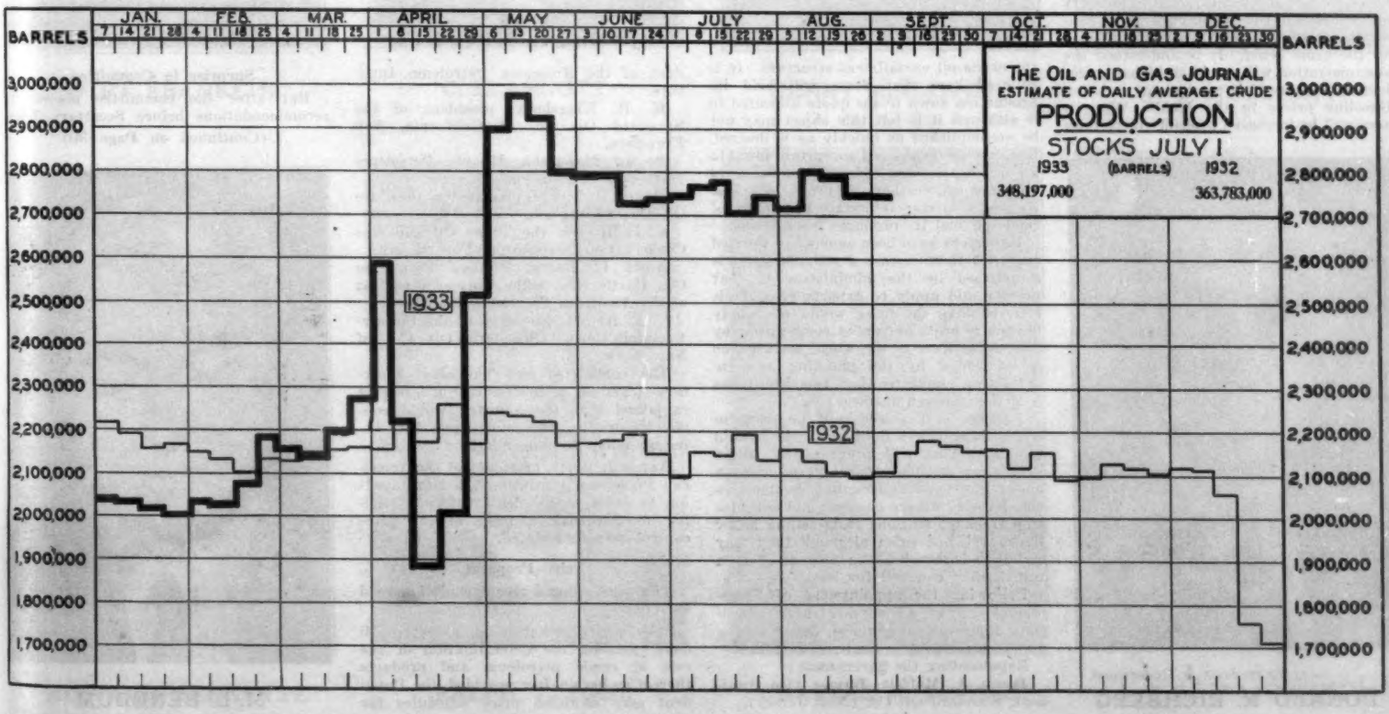
There is a greater confidence prevalent in the petroleum industry now than has been felt for a long time.

Crude Oil Production in the United States

Estimated daily average production for the week ending September 2, and a comparison with previous week and one year ago, follows:

	Sept. 2	Aug. 26	Sept. 3, 1932
Oklahoma—			
Oklahoma City	206,120	265,810	67,230
Seminole-St. Louis	131,340	130,935	110,420
Remainder of State	210,915	208,995	205,170
Total Oklahoma	548,375	605,740	382,820
East Texas—			
Lathrop	284,914	263,198	127,625
Kilgore	209,828	191,303	99,843
Joiner	188,376	170,672	104,417
Total East Texas	683,118	625,173	331,885
West Texas	160,452	161,218	172,534
North Central Texas	74,275	74,955	74,467
Texas Panhandle	48,120	47,587	53,595
East Central Texas	57,963	58,546	56,489
Gulf Coast—Texas	218,495	214,639	118,025
Southwest Texas	54,615	54,964	58,127
Total State of Texas	1,297,038	1,237,082	865,122
Kansas	129,720	129,050	96,315
North Louisiana	26,050	26,155	29,720
Gulf Coast—Louisiana	46,236	46,863	31,125
Arkansas	31,315	31,295	33,585
Eastern Fields	117,000	116,000	112,000
Rocky Mountain area	78,830	78,180	75,817
California—			
Santa Fe Springs	53,250	53,250	60,000
Long Beach	75,250	74,500	70,250
Playa Del Rey	11,000	11,000	14,750
Elwood	13,400	12,500	14,000
Kettleman Hills	64,250	63,750	62,500
Remainder of State	283,000	286,500	255,500
Total California	500,150	501,500	477,000
Total United States	2,774,714	2,771,865	2,103,504

Increase 2,849 Bbls. Daily.



Government Expected to Establish Base Price of $1.11 for Crude Oil on Recovery Cost Basis

By CHARLES E. KERN
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Sept. 5.—A base price of $1.11 per barrel for Mid-Continent crude oil of 36 gravity will be established by the Government, according to the best information available here today. It is said the planning and co-ordinating committee is in accord on this proposal and that the price will be announced either by President Roosevelt or Secretary of the Interior Harold L. Ickes, who is administrator for the petroleum industry under the NRA code.

It is understood the crude oil price was not arrived at on the basis of the formula of 18.5 times the Group 3 price of 60-64 octane gasoline, but is based on the actual average recovery cost today. It will be remembered the Federal Trade Commission decided in 1929-30 the average recovery cost for crude oil in the Mid-Continent area was $1.20. Due to lower recovery costs since then in the East Texas area, those who have been working on recovery costs decided the $1.11 figure represents recovery costs in the Mid-Continent at this time.

Crude oil prices in different fields and areas, such as the Gulf Coast, California, the Rocky Mountain states and the Eastern and Central West territories are being worked out and it is felt they will be relative to the basic Mid-Continent price. In other words, differentials which have obtained in the past will continue except in cases where it is felt inequalities have existed in the past.

Higher Prices Necessary

Those in the oil business who feel higher prices all along the line are absolutely necessary for stabilization of the industry are convinced the planning and co-ordinating committee are practically united on the same belief. It is understood the administration will establish higher prices just as soon as it is convenient to do so. Gasoline prices in the Middle Western area will be increased probably more than those in other areas as, on the Atlantic Seaboard, the discontinuation of the 2-cent cash discount, under the code, will be, in effect, an increase in price there.

The planning and co-ordinating committee will meet here again at 9 o'clock tomorrow morning to work out further details of the operation of the code which became effective last Saturday. One question believed to be under consideration is the intention of some companies to make filling station attendants agents of the company instead of employes. The committe, it is said, may decide that every person employed by a company on July 1 will be considered as an employe of the company under the provisions of the code.

Texas is regarded as the keystone in the crude oil curtailment structure. It is believed here that State will hold its production down to the quota allocated to it although it is felt this object may not be accomplished as quickly as is desired. But, should Texas fail to curtail down to its quota the Government, according to informed sources here, is prepared to use its power to stop interstate shipments of crude oil and its products from Texas.

HAROLD L. ICKES

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DONALD R. RICHBERG

Exporters have been somewhat worried as to whether, in case a refinery price is established by the administration, that price would apply to exports also. It is believed here the price would not apply if such a price prevented competition by American firms in the world markets, as it is desired by the planning and co-ordinating committee that American firms hold their foreign business.

Average cost prices will be used in establishing prices for both crude oil and gasoline. This will prevent any filling station marketing natural gasoline as a motor fuel from underselling competitors who handle refinery gasoline and will also stop trackage stations from selling below the established price although they may claim their overhead is less and, as a result, they can sell for less.

Following the appointment of Secretary Ickes as oil administrator, President Roosevelt announced the planning and co-ordinating committee as follows:

Representing the government:

James A. Moffett, former vice president, Standard Oil Co. (New Jersey).

Donald Richberg, labor counsel of the NRA.

M. L. Benedum, of Pittsburgh, oil operator.

Representing the industry:

Axtell J. Byles, president of the American Petroleum Institute, New York.

Wirt Franklin, president of the Independent Petroleum Association of America, Oklahoma City, Okla.

R. T. Zook, president of the Pennsylvania Grade Crude Oil Association, Bradford, Pa.

Howard Bennette, Western Petroleum Refiners Association, Tulsa.

W. T. Holliday, president of the Standard Oil Co. of Ohio, Cleveland.

E. B. Reeser, president of the Barnsdall Oil Corp., Tulsa, and former president of the American Petroleum Institute.

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K. R. Kingsbury, president of the Standard Oil Co. of California, San Francisco.

B. L. Majewski, Illinois Petroleum Marketers Association, Chicago.

Henry M. Dawes, president of the Pure Oil Co., Chicago.

C. F. Roeser, the Texas Oil and Gas Conservation Association, Fort Worth.

Amos L. Beaty, Phillips Petroleum Co., Bartlesville, Okla., former president of the American Petroleum Institute.

C. E. Arnott, president of the Socony-Vacuum Corp. (Standard Oil Co. of New York).

The committee met Thursday. Secretary Ickes in a few words of greeting explained that the industry would control its destiny, the committee's duty being to make recommendations to him.

Axtell J. Byles, president of the American Petroleum Institute, called the meeting to order. After deliberations extending to Saturday a proposal for price control was formulated.

Price Proposal

The price control recommendation read as follows:

"For a test period of not to exceed 90 days, pending the determination of the cost of crude petroleum and products thereof as hereinafter provided, the President may establish price schedules for petroleum and such products thereof as he may designate and for any or all modes of delivery thereof; it shall be an act of unfair competition to sell or otherwise dispose of or to buy or otherwise acquire petroleum or the products thereof at a lower price than the applicable price established by the President for the test period.

"Thereafter in order to prevent the premature abandonment of wells of settled production, the growth of monopoly, the obstruction of interstate commerce and otherwise to effectuate the purposes of the national recovery act, it shall be an act of unfair competition to sell or otherwise dispose of or to buy or otherwise acquire petroleum at a price below the recovery costs of such petroleum as determined by the Federal agency and approved by the President.

"In determining such recovery costs, the Federal agency shall ascertain the average cost of production of crude petroleum and shall determine the fair economic limit of the cost of production in stripper well areas which must be met to prevent premature abandonment of such stripper wells as may be economically practicable of operation.

"And in order to carry out the purpose of this provision the Federal agency shall also determine the average costs of economically refining, transporting and distributing petroleum and any of its products for different areas and for different methods of marketing, and it shall be an act of unfair competition to sell or otherwise dispose of or to buy or otherwise acquire petroleum or the products thereof below the total costs as found by the Federal agency and approved by the President.

"Prices for crude petroleum established hereunder for different localities and difficult grades shall bear such relations as may be fair and equitable. And in order to effectuate the purpose of the national industrial recovery act the President may prescribe maximum prices for petroleum or any of the products thereof."

Surprise to Committee

But after the committee placed its recommendations before Secretary Ickes

(Continued on Page 30)

M. L. BENEDUM

Oil Industry's Representatives on Planning and Co-ordinating Committee

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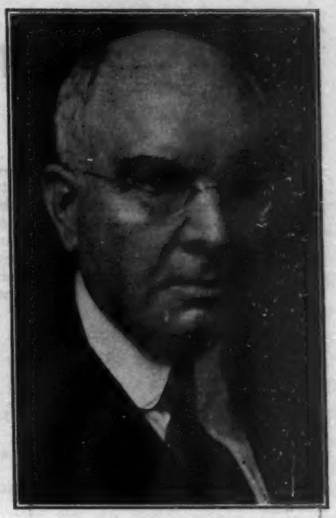

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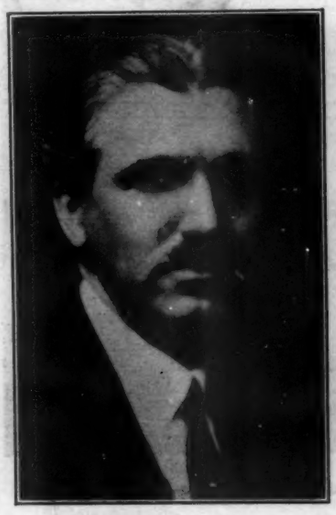

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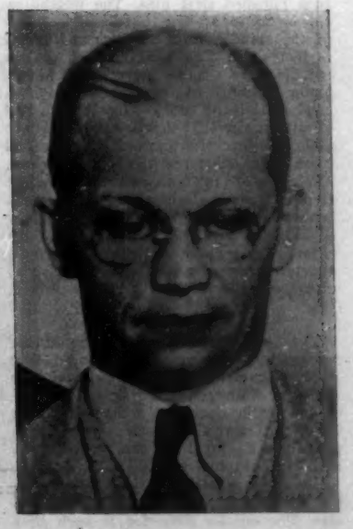


B. L. MAJEWSKI

Develop Simple Type of Friction Machine for Measuring Oiliness of Lubricating Oils

By JOHN S. PHELPS

Because of objections to many machines for rating lubricants according to their oiliness, it was decided to attempt to design and build an oiliness tester for rating fluid lubricants, by means of a comparison of the number of pounds per square inch necessary to rupture the oil film. It was desired to build a machine with the following points:

Inexpensive.
Sturdy.
Practical.
Simple to build.
Simple to operate.
Allowing use of test bearings of different materials.
Requiring a short time for running a test.
Requiring a short time to repolish test bearings.
Allowing numerous runs on the same test bearings.
Having provision for variation of temperature.
Using a generous sample of the lubricant.

The tester was made with a very large factor of safety, allowing for increase in size of test bearings, and for extremely heavy loading. It was impossible to secure data on a machine of this type, but it was expected that the load would be about one-eighth or one-tenth of the load on the bearing-journal type of machine.

Description of Lubricant Tester

The main frame is made of a good grade of cast iron of such dimensions that there is ample stiffness and rigidity. This was done so that the stress and strain would be cared for in using different sizes of test bearings, if it were desired to make changes in them.

The spindle is made of one-half inch tool steel ground to size for a press fit for one-half inch ball bearings at the mounting brackets and the top. The top ball bearing is a thrust bearing, with a single ball set into the top of the spindle. This ball rests against a hardened tool steel plate, held in the housing carrying the knife-edge. The knife-edge, together with the V-block on the weight beam, are of tool steel 1½ inches wide to prevent any tendency to rotate. The weight beam is of one-half inch by 1½-inch tool steel, and is supported by three-eighths inch polished steel pins. The weight ratio is 25 to 1. The unbalanced weight of the spindle, belt, bearings and pulley is 3 pounds. The ball bearings on the spindle have a press fit on the spindle, and a sliding fit in the mounting brackets.

The lubricant cup is of cast iron, and of such a size that it will easily hold the 250 cubic centimeters of sample, and completely submerge the test bearings. The cup rests upon an adjustable bracket clamp which has a small adjustable jack beneath it, so that the weight beam may be adjusted to stand in a horisontal position. The spindle is driven by a one-quarter horsepower Kimble variable speed motor, one-quarter turn V-belt connected.

Test Bearings

The test bearings include one at the top with an accurately measured face resting against the lower one, which is of larger diameter, allowing for any inaccuracies in alignment when assembling for a test run. The bearings were made in pairs, of cast iron, cold rolled steel, and hardened tool steel.

The top one has an inside vertical hole three-eighths inch in diameter, reamed to size. The outside diameter is such that the rubbing area is 0.2 square inch. The upper part of the bearing is bored to a sliding fit for the spindle to which it is pinned with a cotter key. A three-sixteenths inch hole is drilled through the bearing one-eighth inch up from the rubbing face, to create a slight pumping action of the lubricant through the inside of the bearing. Top and bottom bearings are 1 inch in length.

The bottom bearing, as before mentioned, has a face larger in diameter than the top one, to insure the upper bearing of sufficient rubbing surface. A vertical hole three-sixteenths inch in diameter is drilled in this face at its center. The hole does not go straight through, but meets three other holes which are drilled from the outside of the bearing. This system of holes provides a means of circulating the lubricant inside the test bearing.

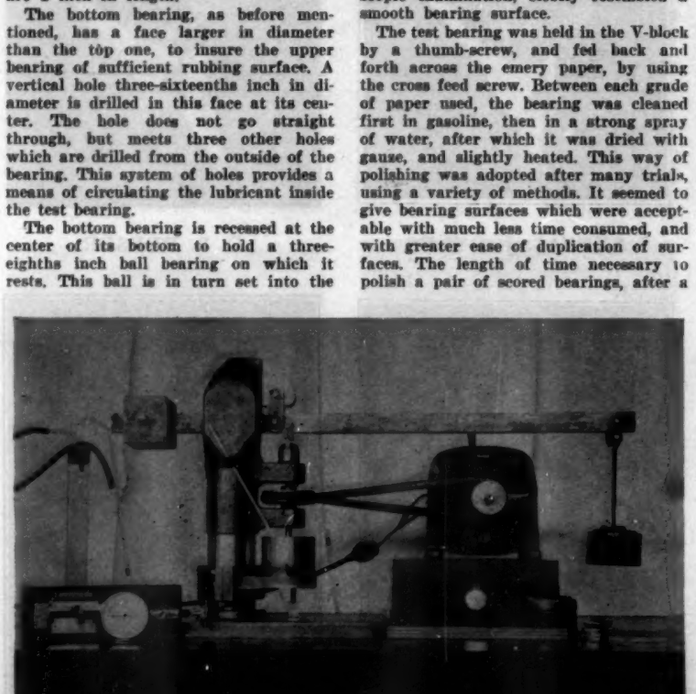
The bottom bearing is recessed at the center of its bottom to hold a three-eighths inch ball bearing on which it rests. This ball is in turn set into the bottom of the test cup. On opposite sides of the ball, both in the cup and in the bottom bearing, are placed one-eighth inch holes, which hold wooden shear pins of soft wood. The ball bearing allows proper alignment of the rubbing face against the bottom bearing face, while the wooden pins protect the two faces from excessive scoring, when the oil film ruptures and the metal faces come together. These shear pins were chosen to give best results after trials of different sizes and different materials. The pins are cut short enough that the bottom bearing is allowed to rock slightly to and fro in the direction of the pins. The size of these pins is such that shear cannot take place until after the bearing faces come together. During test runs it is possible to anticipate the shearing of the pins by the unsteady speed performance of the motor at high load.

A test bearing of 0.5 square inch area was made and run, for determining the effect of increase in bearing area on the unit load carrying ability of the lubricant. This bearing and its accompanying larger bottom bearing, was made of hardened tool steel.

Polishing Apparatus

To three different lathe face plates were glued one-quarter inch Masonite board. This was ground true by means of a tool post grinder mounted on the lathe carriage. The tool post was then removed and a V-block mounted on the carriage by means of a clamp. This block was set absolutely at right angles to the face plate, by using a dial gauge. To the face plate was thumb-tacked the different grades of polishing papers used. They gave a polished surface which upon microscopic examination, closely resembled a smooth bearing surface.

The test bearing was held in the V-block by a thumb-screw, and fed back and forth across the emery paper, by using the cross feed screw. Between each grade of paper used, the bearing was cleaned first in gasoline, then in a strong spray of water, after which it was dried with gauze, and slightly heated. This way of polishing was adopted after many trials, using a variety of methods. It seemed to give bearing surfaces which were acceptable with much less time consumed, and with greater ease of duplication of surfaces. The length of time necessary to polish a pair of scored bearings, after a test run, was from 10 to 30 minutes, depending on the depth of score.



Apparatus used to determine oiliness

Tests and Data

The tests were run at a spindle speed of 500 r.p.m., checked at intervals with a tachometer. This gave a rubbing speed of 65 feet per minute for the 0.2-inch bearing. Due to line voltage variation, it was often necessary to throw out tests, because of inability to keep a constant speed, even with the variable speed motor adjustment.

As noted on the test data, the motor was stopped as soon as the pins sheared. It was possible to note this condition, for the wire indicator in the bottom bearing, started revolving when this happened.

A nomenclature showing the bearing metals used in each test, is employed throughout. It is here given:

C I — Cast iron.
C R — Cold rolled steel.
T S — Hardened tool steel.

Where the top bearing in a test is of cast iron and the bottom bearing of cold rolled steel it is recorded as CI/CR, etc.

Bearings were run 10 minutes without weights on the weight pan, then 1-pound weights were applied to the pan at five-minute intervals, until in the vicinity of the maximum load of the test. Then increments of 0.2 pound were applied at one-minute intervals, until seizure occurred. Some of the first tests were conducted using 4-ounce increments, but this was later changed.

The oil samples used in the tests were S.A.E. No. 30 automobile engine lubricants. They were as near alike in viscosity as it was possible to find. Sample L.T.1 is a well-known paraffin base oil. Sample L.T.2 is an asphalt base oil, which is selling at $1 for 5 gallons. Sample L.T.3 is a Mid-Continent oil, which is highly advertised as having extra oiliness properties. Sample L.T.4 is the same oil as in Sample L.T.2, but it has 2 ounces of a highly advertised oil dope added to 1 quart of the lubricant. This sample was run to find out the effect of this dope on the lubricant.

Discussion of Results

These data show that lubricants of the same viscosity give different results when the oil film is loaded until rupture occurs. They also show that the bearing material is a large factor in the load carrying ability of the lubricant.

It is noted in Table 3 that the loads when using the hardened tool steel bearings were lower as a whole than in the other cases. They were more uniform as the tests were run. The bearing faces were not scored to as great depth as were the other bearings when rupture occurred. Therefore a shorter time was necessary to recondition the bearing. If the machine is to be of use commercially this consideration of the time element is of importance.

The variance in the ratings of the lubricants with the different bearing materials might be traced to the ability of one lubricant over another to penetrate a metal, or to adhere more tenaciously to a surface. These properties are claimed by the manufacturer of Lubricant No. L.T.3. Also the manufacturer of the oil dope in Lubricant No. L.T.4. The oil dope in the latter contained a form of graphite. This may account for this sample having the highest reading using the TS/TS bearings.

The high reading for Lubricant No. L.T. 3 under CI/CI bearings in Table 3 was the only one obtained and therefore should not have too much consideration. Tables 3 and 4 show that Lubricants No. L.T.3 and L.T.4 were not run in tests with CR/CI or CI/CR bearings. This was because the TS/TS bearings had been tried and found to be so much more successful in giving good results.

Tables 1 and 2 were made from tests selected from the data. These tests were considered the most normal. At times notations were not recorded on the original data sheets when there was some doubt as to the accuracy of the test. This may account for some of the variance in the results. Maximum difference in readings is shown in order that this small variation may be readily noted. Allowing this tolerance the tests may be called check tests in all cases.

Many tests were not successful because of minute particles of polishing grit. The way seizure took place would indicate the presence of the grit. The pins would shear without the customary attempted slowing of the motor as the oil film started to rupture. The grit particles could often be seen imbedded in the surface by using a magnifying glass. The opportunities of varied tests on this machine are many. Bearings of any desired materials may be made and used. An electrical immersion heater could easily be applied in the lubricant cup. A cooling jacket outside the cup could be supplied for the use of "dry ice." The power im-

(Continued on Page 33)

Increased Gasoline Prices at Filling Stations Are Inevitable; Entirely Justified, Average Low

By ANDREW M. ROWLEY

Increased prices for gasoline at the filling station are inevitable with the petroleum industry operating under the NRA and the code made effective last Saturday. Oil companies realize this fact but now is the time to make the motoring public realize it and, what is more important, to impress upon motorists the fact that even with these increases, oil companies will be getting less for their gasoline than they have in the past.

The retail price of gasoline, exclusive of taxes, averages 19.38 cents a gallon for the past 20 years or from 1913 to the first of this year. The average price now, exclusive of taxes, is approximately 14 cents.

The big increase in cost to the motorists has been due to State and Federal gasoline taxes which have risen from an average of one-tenth of one cent a gallon in 1920 to 5.64 cents a gallon at this time.

Taxes Are Big Factor

Consequently, while oil companies are receiving less for their principal product the motorist has to pay a price out of all proportion to cost because of these exceedingly high State and Federal gasoline taxes.

The government has taken 1926 as a basis for its calculations in formulating plans for operation of business under the NRA. That year was selected as it was felt it represented the period of more nearly normal business conditions and employment. The retail price of gasoline in 50 representative cities scattered throughout the United States in 1926 averaged 23.26 cents a gallon which included taxes of 2.34 cents a gallon, the retailers netting 20.92 cents a gallon.

The average retail price of gasoline in these 50 representative cities on July 1 of this year, the date generally accepted for a price basis under the different codes, was 18.7 cents a gallon which included State and Federal gasoline taxes of 5.64 cents a gallon. In other words, oil companies on July 1 of this year were getting 7.86 cents a gallon less for gasoline than they were in 1926 or during the period selected by the government as a basis for calculations under the NRA.

It has been estimated that operation under the NRA will cost the petroleum industry approximately $300,000,000 a year due to increased wages and the employment of about 250,000 additional men. The oil business has been losing money during recent years due to low prices caused by overproduction in flush fields, gasoline tax evasion, and the sale of illegally produced crude oil at prices under regularly posted quotations.

Average Filling Station Price in the United States

(Cents per gallon)

	Without tax	Tax January 1	Price to public
1913	----	---	16.6
1914	----	---	14.0
1915	----	---	12.7
1916	----	---	19.9
1917	----	---	21.6
1918	----	---	22.7
1919	----	---	24.2
1920	28.4	.10	28.5
1921	24.3	.12	24.42
1922	23.7	.33	24.03
1923	19.5	1.30	20.80
1924	19.10	1.32	20.42
1925	19.92	1.76	21.68
1926	20.92	2.34	23.26
1927	18.01	2.47	20.48
1928	17.63	3.08	20.71
1929	17.91	3.07	20.98
1930	16.33	3.77	20.10
1931	13.09	3.83	16.92
1932	13.30	4.09	17.39
Average 20 years	**19.38**	**2.12**	**21.5**
Average first 6 mos., 1933	11.90	5.40	17.30
July 1, 1933	13.06	5.64	18.70
September 1, 1933*	14.00	5.64	19.64

Prices for period 1913 to 1923, inclusive, based upon reports compiled by Bureau of Labor and Department of Commerce. Balance of data compiled from survey of price changes in 50 scattered cities in United States made by The Oil and Gas Journal.

*Estimated.

In order to support the government's program to rehabilitate business and increase employment, the petroleum industry must receive for its products a sum which will cover the additional expenses incident to the employment of large numbers of persons under the NRA code and higher wages it must pay and which will permit it to realize a reasonable profit on its operations. No business in the world can go on indefinitely showing a loss year after year. And the American motoring public does not expect the oil business to continue to operate at a loss.

Need Additional 3½ Cents

It has been estimated oil companies will need about 3½ cents a gallon additional at the filling station to permit it to operate its business at a reasonable profit and pay out the $300,000,000 additional each year in wages for newly hired employes.

Added to the July 1 price this increase of 3½ cents a gallon would make the net gasoline price to retailers average 16.56 cents a gallon and would make the average price to the motorist 22.2 cents a gallon which would include the 5.64 cents a gallon he must pay for State and Federal taxes.

This net price of 16.56 cents a gallon to the oil companies or retailers of gasoline is less than the motorist paid for gasoline in 1913 and is 2.62 cents a gallon less than the average price paid by motorists during the past 20 years. Automobile owners and drivers certainly cannot claim that such a price is not justified especially when it is so much lower than the average of past years and in view of the fact the oil industry is under obligation to expend $300,000,000 additional each year for wages for the thousands of employes it has hired to conform to provisions of the code.

It will be natural for motorists to wonder at any increase in gasoline prices at filling stations approximately 3½ cents a gallon or thereabouts and many of them undoubtedly will ask a lot of questions. It is probable complaints will be made to State and Federal bodies by motorists who are not informed as to the real situation.

For this reason it is most important that oil companies throughout the United States place the facts in the hands of their filling station attendants so that these direct contacts with the public may be in a position to explain the reason for the higher prices of gasoline. It would be well for oil companies to have small folders prepared and to distribute these folders immediately at filling stations so that the public may know the true situation and be prepared to accept without complaint the increases in gasoline prices which are inevitable.

A. I. M. E. Stabilization Forum, Article No. 11; Balancing Supply and Demand of Petroleum

By SIDNEY A. SWENSRUD

The A.I.M.E. Forum sets forth four main aspects of stabilization in the oil industry, namely:

1. Balancing supply and demand.
2. Developing greatest recovery at lowest cost.
3. Establishing an equitable standard of ownership rights.
4. Preserving ownership control.

It is the purpose of this article to consider the matter of balancing supply and demand, first, in its relationship to stabilization, and second, in terms of the problems involved in attempting to bring about such a balance.

Balancing supply and demand in the petroleum industry hardly can be considered an end in itself; its value depends upon its being the means to certain ends regarded as desirable.

What, then, might be accomplished by balancing the supply of petroleum with the requirements thereof? Would it result in greater recovery at lower cost? Would it lessen the physical waste of oil aboveground? Would it promote superior as against inferior consumption uses of petroleum? Would it help to stabilize prices, profits, employment? Would it reduce excessive and wasteful capital expenditures? Would it lessen wasteful and destructive competition in the marketing end?

Author Well Qualified to Discuss Subject

The mechanics of stabilization call for the delicate balancing of supply, demand, and price. To what extent each of these factors influences and controls the other two, and whether or not any one or more of them can be arbitrarily controlled to the advantage of society, are questions of vital public concern at this time.

Mr. Swensrud has long been known to attendants of A.I.M.E. forums where his analyses of marketing problems have been in constant demand. Consequently, when this Stabilization Series was started several months ago we urged his participation. He then consented to give us an article on this problem that has now become the pivotal issue of the New Deal.

His training and experience both peculiarly qualify him to analyze this subject on which no man can yet speak with authority. He secured his B.S. degree from the University of Minnesota and his M.A. degree from the Harvard Graduate School of Business Administration, at which institution he remained as a member of the faculty some two years after graduation. He is now assistant to the president of the Standard Oil Company of Ohio, a non-integrated company. We take pleasure in submitting this very excellent analysis on an important division of the stabilization study.

(Signed) EARL OLIVER, Chairman,
Stabilization Committee,
A.I.M.E. Petroleum Division.

Relationship to Stabilization

Since balancing supply and demand for petroleum under present conditions means the restricting of supply, it probably would result in an improvement in recovery of oil from the ground, because, even without the benefits of complete unit operation of oil pools, it appears to be generally conceded that the mere restricting of the flow from flush pools tends to result in greater ultimate recovery from such pools.

It seems likely, however, that this particular objective could be more effectively realized by approaching it from the standpoint of the method rather than the quantity of production. The mere restricting of production to market demand would not of itself prevent the drilling of unnecessary wells or insure the development of an oil pool in the most efficient manner. It might, however, tend to raise "slow" signs to wild development of a new field, by virtue of giving advance notice that production from the new field would be strictly limited from the start, thus reducing the hope of heavy immediate returns from a "strike."

Restricting the supply of petroleum to current requirements, if accompanied by a reduction of excessive stocks aboveground, should lessen the physical waste arising from evaporation, leakage, fire losses, and the like, as well as reducing the capital expense and carrying charges on excessive storage.

Superior as against inferior consumption uses of petroleum might be promoted by balancing supply and demand if doing so tended to stabilize prices at a higher average level than otherwise would prevail, in as much as the uses to which petroleum is put appears to be primarily a function of price. When the price is low there is less incentive to get the maximum yield of the so-called superior products such as gasoline.

The Effect on Price

What about the effect of a supply and demand balance on price then? This obviously is one of the most vital parts of the whole question. For what, it is asked, is stability without a reasonable price level? There are some who perhaps want prices far beyond what might be reasonable, but it seems unlikely that any governmental assistance necessary to achieve a balance of supply and demand would lend itself to that end. It does seem patent, however, that the average price of the last few years has not been high enough to cover the cost of much of the settled production which is an essential part of our supply over any reasonable period, and probably would not have been high enough even if such oil had been produced in accordance with the most efficient methods of recovery.

If production were rigidly restricted to impartially estimated requirements with no doubt as to its continuing to be so restricted, and if there were always included in the allowed supply a substantial proportion of settled production, then the price resulting naturally from such a combination of supply and demand, without any fixation, would, we believe, tend continuously to be high enough to cover the average cost of the settled production included in the supply factor. For it is a basic law of price that it tends to cover the highest cost part of the supply needed to meet the demand. It is true our experience thus far with production restrictions seems rather to have disproven this principle, but that, we believe, is due to the doubt that has always attached to the probable continuance of the supply restrictions. If the control over production were such as to leave no reasonable room for such doubt, then we believe the principle could be relied upon to operate—and to assure a crude oil price level which would reasonably cover the cost of settled production.

Higher crude prices, of course, would tend, temporarily, to increase the cost of finished products to the consumer. A temporary low price to consumers, however, is of little significance or benefit if it is at the expense of wasting the future market supply. And so long as the price is not extortionate, but only what is necessary to cover the cost of essential production over a reasonable period, the consuming public, over such a period, would be benefited and not injured. Furthermore, as suggested hereafter, there is reason to believe that a better balance of supply and demand would tend gradually to reduce the present excessive cost of distribution, which would be in the consumers' interest.

Reducing Capital and Marketing Waste

As to reducing wasteful capital expenditures, balancing supply and demand, as already suggested, probably would moderate wild drilling developments in the production end, although without a change in the law of capture it would not alter the necessity of drilling ordinary offset wells.

In the other ends of the business, namely, transportation, refining, and marketing, it is probable that if the pressure of an oversupply of crude could be removed, there would be a substantial relaxation of the competitive race for facilities to transport, refine, and market those oversupplies. To the writer it has seemed apparent that most of the difficulties complained of in the marketing end of the business, for example, had their roots in potential or actual overproduction of crude oil. Not all of these difficulties, of course, could be eliminated by the mere balancing of supply and demand, because there still would be the problem for an individual company which had large crude production or a large crude reserve, of trying to secure the facilities which it might believe were desirable to provide for the distribution of its ultimate production. Even in these cases, however, if such companies could rely upon continuously finding a profitable outlet for their crude through other refining and marketing companies, they might be less concerned about building up their own outlets so extensively. For after all, it does not follow that the producer of a raw material can make more profit by converting it into finished products and marketing those products himself than he could from selling his raw material as such if an assured market for it existed. And it should be noted that if the total production of crude were confined to the current requirements, then by definition a sound market for all crude current production automatically would exist.

Balance Worthy of Attempting, But Artificial Barriers Should Be Removed

From the foregoing discussion it is apparent, we believe, that balancing the supply and demand of petroleum, while constituting no overall panacea for the industry, does contain the possibility of bringing about substantial benefits in a number of directions, which make such a balance worthy of attempting.

In stating this conclusion, however, it seems pertinent to suggest that if such a balance is desirable, then in the interest of accomplishing it as far as possible by natural means, we should seek to remove any artificial obstacles that stand in the way. The chief of these, of course, is the man-made law of capture under which the producer must drill for and produce his oil to prevent its being stolen from him by adjoining leaseholders. Under these legal conditions price is a very ineffective regulator of supply. The owner simply is not in a position to exercise his judgment whether or not to produce his oil. Of course, he can produce and hold it in storage awaiting a more favorable price, and to some extent this is done, but it is seriously limited by the financial, and to some extent the physical, difficulties involved. A change in concept, therefore, from the law of capture to one of ownership in place probably would go far toward promoting a natural, as contrasted with an artificial, balance.

Change in Law of Capture Not Sufficient to Effect Complete Balance

There are some people who contend that we should not attempt to go beyond this in trying to achieve a balance. Remove the legal compulsion

inherent in the law of capture, they say, and allow the economic forces of supply and demand, expressing themselves normally through price, to operate, and we have done all it is sound or necessary to do.

There is much weight in this view. The fact remains, however, that even with a change in the law which would enable owners more fully to exercise their choice, the low cost of oil production from new flush pools probably, in the case of too many owners, would constitute an irresistible temptation to offer their oil at lower prices than they might reasonably expect to get by holding off. There always would be the uncertainty as to the rewards for waiting; always the temptation to "take the cash and let the credit go"—so long as the current price, even though too low to cover production costs in general, was high enough to leave an attractive profit margin for the particular new pool.

In an industry where the supply is a manufactured or reproduced article, as contrasted with a mineral resource, new low cost production usually would reflect some genuine advance in the art, or an increased degree of efficiency, and if its entrance into the market tended to disturb existing conditions, we should, for the most part, have to put it down as one of the necessary consequences of industrial progress.

But low cost crude oil from a new flush field has no such necessary connotation; man may deserve some credit for discovering the location of low cost oil, but the conditions which make that low cost possible are solely the gift of nature. All of the oil we can ever expect to recover is already in existence, practically speaking. It can hardly be assumed, however, that its discovery will coincide perfectly with current consumption requirements. When discovery proceeds more rapidly than requirements develop, and wasteful and uneconomic exploitation results, we need to remind ourselves that our real objective should be the best result over a reasonable period. And we need not contemplate a future period beyond our own generation, or even beyond a decade, to realize that permitting riotous low cost production from a particular pool for a brief interval not only contains no assurance of lowering the average cost over such a period, but assures the certainty of increasing it.

Under these conditions, there is, in the writer's view, no reason why we should not attempt to deal with the vagaries of production and require that new low cost sources thereof be fitted into the supply factor in a way which will result in the minimum of disturbance to existing fields whose continued production is essential and worthy of protection, whether in the interest of ultimate recovery, the reduction of average cost over a reasonable period, or in the interest of a reasonable continuity of operation and a greater stability of organization, employment, and financial return. After all, if we can avoid it, why should we permit the chance discovery of a new oil field to disrupt a whole industry without achieving any new efficiencies, and in the end without even benefiting the interests in the new field, considering the returns they might have obtained from the pursuit of a more rational course?

2. Problems Involved in Balancing Supply and Demand

To effectuate a beneficial balance of petroleum supply and demand is not as easy as reckoning up its advantages. Numerous problems and difficulties are bound to be involved. It is the purpose of this section to consider a few of these.

1. Need of effective and continuous control.—Strange as it may seem, we have produced and imported less petroleum products in the last 2½ years than we have consumed and exported, yet this period has been one of the most chaotic the industry has experienced, and it has been characterized by practically all of the typical manifestations of overproduction.

It is apparent from this that the type of balance effected over this period as a whole has not been what we might term a beneficial balance. There is little need of reviewing the reasons for this. We may sum them up by saying that the elements of certainty and continuity have been lacking. The fact that supply and demand have been or are in balance at some particular time is of little significance if future overproduction appears imminent. And it always will appear imminent so long as there is potential capacity for overproduction without absolute certainty that it will be controlled effectively and continuously. The record of daily production, legal and/or illegal, for the East Texas Field, to cite the example of one case alone, is ample evidence that no such confidence could have existed during the period in question.

We must, therefore, put effectiveness and continuity of control down as one of the first essentials of achieving a beneficial balance between supply and demand. For this reason and for others set forth hereinafter it is believed that Federal authority over production is a clearly indicated requirement.

2. The problem of price.—In considering any proposal to adjust supply to some predetermined estimate of demand, the question of price as an element of demand inevitably arises. For, as Messrs. Marshall and Meyers, in a previous article in this series, put it, "There is no such thing as demand in a vacuum—there is demand only at a price." And they say, "Even if it should prove true that gasoline consumption is relatively inelastic, it does not follow that the demand for crude likewise is inelastic. When the price of crude drops it attracts speculative demand. . . . Low prices stimulate new though inferior uses such as furnace consumption and cheaper though inefficient refining . . . and encourages export in competition with low price foreign fields. No matter what allowance is made for the inelasticity of gasoline consumption, these other outlets for crude . . . are affected by and affect price."[1]

It should be noted that these remarks were concerned primarily with the legal and political aspects of proration and were in refutation of the contention, sustained in certain court decisions, that proration based on market demand had no effect on price—Messrs. Marshall and Meyers' purpose presumably being to question some of the arguments on which proration has been based, and to bring into the open the obvious fact that higher prices have been one of the chief purposes of proration.

But admitting that restricting the supply would affect price (that indeed being one of the objectives), the practical question, so far as we are concerned here, is whether the demand for petroleum products varies so in relation to price that no one can reasonably estimate future consumption without definite reference to price; or to put it in another way, whether the restriction of supply to some predetermined quantity, of itself would establish the price and therefore the demand, so that in the end we would be adjusting demand to supply rather than vice versa?

The answer to these questions depends, we believe, upon the practical importance of price as a factor in determining consumption demand. There are, of course, various components in the demand factor, and it seems advisable to examine them separately. First, however, we can dismiss speculative demand as not constituting a current consumption requirement in any real sense.

Export demand, of course, is affected by the relationship of prices in different parts of the world, also by tariffs, import restrictions, and the like. If the effect of production restriction in the United States were to raise the domestic price level, then presumably the result would be some shrinkage in export demand. From the standpoint of policy for the industry or the nation this might or might not be considered a disadvantage. But so far as the mechanical problem of balancing supply and demand is concerned, there would not appear to be any special difficulty in estimating the probable export requirements from time to time, basing such estimates on current observable trends in physical movements, price and cost relationships, and the like.

Demand for Petroleum Products

The domestic demand for petroleum products, or for that matter any demand, probably should be considered under three product classifications: First, there are what we might call the primary products, chief of which is gasoline, but including also kerosene, lubricating oils and certain technical naphthas, and other light distillates for which no cheap nonpetroleum substitutes are readily available. These are the products primarily sought in refining crude oil. Their consumption does not appear to be very definitely affected by price, at least within the range of price we have experienced thus far. There of course is no escaping the economic fact that for any commodity the level of price affects its consumption in some degree. But so long as the prices of refined products resulting from any attempt to balance supply and demand did not in fact depart violently from the past range of such prices, we probably would be safe in assuming that the requirements of these primary products could be estimated without worrying too much about the factor of price.

The economic committees both of the Federal Oil Conservation Board and the American Petroleum Institute have for a number of years been forecasting motor fuel consumption and crude oil requirements, and the writer, who has served on both committees, has never observed that any special consideration was given to probable future prices in arriving at the estimates. While this is not conclusive, it does at least indicate that price has not been found to be a factor of obvious importance.

In the second class we may include the by-products of crude refining, such as fuel oil, asphalt, road oil, coke, and refinery gases. Although there is some slight choice as to the total quantity or percentage of these products which may be made, and considerable choice as to the particular combination of them to be made, nevertheless under ordinary refining processes a fairly fixed proportion of the crude refined must result in some such products. They do not constitute the primary purposes of refining, however, and for practically all of them there are cheap and readily available nonpetroleum substitutes. They are made, rather, because they must be made in order that the primary products can be manufactured, and they are sold for what they will bring in competition with their substitutes. Any estimate of crude oil requirements, therefore, need have little concern with these by-products; the supply of them will be whatever results from running the crude oil necessary to furnish the primary products.

Third Classification

The third classification lies between the first two—it consists of products which are neither completely primary—nor completely by-products. Typical thereof are domestic furnace oils and such products as Diesel oil used for generating power which could be readily supplied from coal, electricity, or some other source. A modern refinery equipped with adequate cracking facilities need make practically none of these products, but on the other hand, if desired, it can make them in considerable quantity. If made, they reduce the recovery of gasoline to the extent that they could have been converted into gasoline by cracking. The demand for these intermediate products depends very definitely upon the relation of their prices to those of available substitutes. The attractiveness of manufacturing them, on the other hand, depends primarily upon the relation of their price to that of gasoline. Here, then, is one group of petroleum products the supply and demand of which would appear to be very definitely affected by price.

Since the general price level presumably would be affected by the control of supply, it might thus appear that the fixing of a definite quantity of crude production, through its affect on price, would determine the demand for these intermediate products. To a certain extent this is believed to be the case; it should be noted, however, that an offsetting factor would tend to arise, because if the price level got high enough to discourage the consumption and manufacture of these intermediate products, the yield, and therefore the supply, of gasoline correspondingly would tend to rise. This would lessen the value of gasoline and in turn make the intermediate products relatively more attractive again.

In any event, considering that these intermediate products constitute only a small fraction of the total demand, and that, moreover, they do not represent what could be considered very superior uses of petroleum, it seems probable that any qualifications as to the importance of price in connection with them would not need to loom very large as a difficulty involved in the overall problem of estimating crude requirements.

Summarizing the price problem in its relation to demand, we believe it is fair to conclude that the difficulties to be anticipated are not great enough to make the balancing of supply and demand appear to be a dilemma. The overwhelming factor in determining crude requirements is gasoline demand, and the practical fact appears to be that it is not predominantly affected by price within a reasonable range. Undoubtedly many minor difficulties relative

[1] See page 11, The Oil and Gas Journal, June 29, 1933, or March, 1933, Yale Law Journal.

to price would crop up in any actual attempt to balance supply and demand, but we believe they could be safely left to be dealt with as they arose. It of course is fundamentally essential that the estimates of crude requirements be made by an absolutely impartial body, which had no ulterior motives to serve, and which had at its command all of the information and talent necessary to make intelligent estimates. It seems apparent that the final responsibility for making such estimates would have to rest outside the industry and outside any particular state or group of states. By elimination, therefore, it seems probable that the proper agency would be the Federal Government.

3. Who shall handle the control and the allocation of production?—Any program of balancing supply and demand which involves the restricting of crude oil production creates a need for some plan and authority for allocating the production among the various sources thereof whose owners desired to participate. It is beyond the purpose of this discussion to go into great detail on this subject, we shall therefore merely suggest certain general principles which are believed to apply.

We have already emphasized our belief that the prime requisite of any beneficial balance is as near absolute certainty as possible that the control over production will be continuous and effective. For this reason we personally cannot escape the conclusion that the final authority for regulating supply would have to lodge in the Federal Government. Obviously no one state by itself can make any substantial contribution. A compact among the oil-producing states, sanctioned by the Federal Congress, might be given sufficient authority to do the job, but there always would remain the potential need of an umpire to resolve differences of opinion among the states as to what their share in the production should be; then there would be the danger of some state deciding to withdraw from the compact, and such withdrawal by an important oil state obviously could wreck the entire scheme. Under any compact plan there would be the need also of some provision to protect the nonproducing states against any plan which did not appear to be in the interest of the people as a whole. No alternative to Federal control, therefore, would appear to fulfill all of the essential requirements; consequently, in spite of our hesitancy to turn over such powers to the Federal Government, it is believed that if we are really interested in achieving a genuine balance of supply and demand and a stabilized price level, we should face the fact that ultimately Federal control undoubtedly would be found necessary, and therefore waive our traditional objections and prejudices and embrace it at the outset.

In the actual administration of such control, we can find no objection to the concept of permitting local ownership control whenever practical. We can see no objection, for example, to the Federal Government allocating the estimated crude oil requirements among the various oil-producing states and leaving it to them to allocate their respective totals among the sources of supply within their states. If they did this job effectively, and rigidly confined their production to the specified totals, there would seem to be no reason for the Federal Government interfering, although we believe Federal authority over allocations within the states should be reserved against the possible failure of any state to do its job effectively. On the same conditions, the states, in allocating production within their borders, so far as the problem of balancing supply and demand is concerned, could leave to the operators in any individual pool the determination of how the allowable production for that pool should be divided among the operators therein.

Allocation of Production

Apart from the question of where control should lodge, there is the question of allocating the production, first, between domestic production and imports, second, among the various oil states, and lastly, within the states. Setting import allowables is primarily a matter of policy rather than of mechanics. In the last few years we have witnessed a definite movement to restrict imports, and probably so long as there is potential overproduction of crude oil within the United States we shall continue to do so. It probably would not be difficult, therefore, for any agency, responsible for production allocation, to establish import allowables consistent with the general policies laid down by legislative action or public opinion.

The division of domestic production among the various oil states would be a more difficult problem. Various bases have been suggested such as relative reserves, potentials, cost of production, proximity to the market, existing trade channels, or just old-fashioned horse trading. The problem is somewhat akin to that of public utility valuation for rate-making purposes—as the Supreme Court has several times observed, there are a number of factors which must be considered. That is about all we can say here—it seems unlikely that any single standard can be applied; the prime requisites are complete and accurate information, impartially, and a nice degree of judgment in weighing and selecting the factors involved. A study which illustrates some of the methods of approach, as well as setting forth a suggested schedule of state totals, is that recently made by Dr. Joseph E. Pogue (see The Oil and Gas Journal, June 22, 1933).

The allocation of state totals within the states again involves numerous problems but it is beyond the scope of this article to attempt any detailed consideration of them.

4. The problem of allocating the supply of crude among refineries—In any program which definitely restricted the total production of crude oil, it might sooner or later be found that some provision would have to be made to assure that any refiner be able to obtain a share of such crude oil proportionate to his legitimate share in the market for refined products. It is possible that otherwise the producers or pipe line purchasers of the allowed crude production could cut off, or regulate according to their own purposes, the crude supply for a particular refiner. Traditionally, such a refiner usually could go out and secure his requirements from existing or from additional production, or he could go into production himself. While there would appear to be no reason why he could not continue to bargain for allowable crude oil, nevertheless, with rigid control of production, it is possible that these methods might be insufficient to assure him an adequate supply. If there were no special advantage in refining crude oil as against selling it as such, then it might appear that any producer or purchaser would be just as willing to sell his oil as to refine it himself. Considering the excessive refining and marketing capacity which exists, however, it is likely that some producing or purchasing companies having such excess capacity would prefer to utilize it to the full before selling any part of their crude oil to others.

There would, therefore, be the problem of piloting a rather delicate course between the policy of allowing the producers or purchasers of crude oil to use or sell it purely as they saw fit, and the opposite policy of allocating the supply on the basis of some particular status quo of refinery runs. The latter course certainly would be at least as disadvantageous as the first, because under it the whole setup of refining and marketing would tend to be frozen into a rigid mold. Possibly the golden mean would be to assure to each refiner such a share of the crude oil as he could demonstrate the ability profitably to refine and to market the refined products hereof, assuming the cost of his crude oil at all times to be the currently prevailing published well prices for such crude plus the published gathering and transportation charges to his refinery. If, then, he were permitted to maintain a reasonable inventory of crude oil and of finished products, he would have sufficient leeway temporarily to expand his refining and marketing operations if his efficiency warranted. If, for example, on the basis of such efficiency he increased profitably, his sales of finished products, he would then temporarily reduce his inventory and for the next period he could demand a sufficient increase in his crude supply to take care of his additional sales requirements and rebuild his inventory to the previous level. If, on the other hand, he were unable to demonstrate that he could hold even his existing business on a profitable basis in terms of the formula suggested, his share in subsequent refinery crude runs would then have to contract down to the point where he could demonstrate that his operations were profitable.

Such a plan might provide an equitable basis on which to allocate crude supplies among refiners, in as much as it would be based upon their relative efficiency in refining and distribution. The details of administration, of course, would be rather burdensome, but there is an old saying that, "if the principle is clear, the technique will follow." The only difference, after all, between this basis and what actually happens in free competition would be that a refiner or marketer could not utilize low cost crude production to finance losses or inefficiencies in refining and marketing. It is difficult to see where any inequity or social detriment would result from such a requirement.

3. Summary

We have tried in this discussion to appraise the possible benefits to be achieved by balancing supply and demand in the petroleum industry, and to examine some of the problems which would arise in attempting to bring about such a balance. Undoubtedly we have missed many important considerations. The main question, however, is whether the possible benefits are great enough to justify the attempt, recognizing that in the attempt innumerable difficulties would be encountered. In concluding that the attempt is warranted, we desire to emphasize that our conclusion applies only to the petroleum industry.

There are two main reasons for this qualification: In the first place, the predominate demand for the primary products of petroleum is a derived or secondary demand, and one which is relatively easy to estimate without reference to price. We would not draw the same conclusion with respect, for example, to the demand for automobiles, or for any other commodity where the demand is a primary demand, and one definitely affected by price. The second reason relates to the supply side. To restrict arbitrarily, on the basis of some preconceived notion of demand, the production of some product which can exist only by being currently created by men or machinery, is to lose for all time products that might have been had. The social responsibility resting upon human judgment in such cases is therefore very different from that involved in merely restricting the rate at which the supply of a commodity such as petroleum may be brought onto the market. No program of crude oil restriction can alter by one iota the total all-time supply of the product, for man has no control over its creation. Under such a program as is here considered, therefore, if an error was made, it would have no permanent significance so far as the all-time supply is concerned. This is not the case, however, for agricultural products or for most manufactured products.

There is one final thought which we believe should be expressed. Any governmental assistance given to the petroleum industry in attempting to achieve for it a greater degree of stability must find justification on the ground that it is in the interest of the public as a whole. Under such a premise, and especially if any control or regulation of price were involved, it is difficult to escape the conclusion that sooner or later the Government would find itself faced with the responsibility of dealing with the methods as well as the quantity of production. For what would be the logic or justification for the Government, presumably acting in the interest of the public, regulating the rate of production but giving no attention to the great wastes of the resource itself which result from applying the antiquated principles of the law of capture? It is inevitable, we believe, that a change in the principle of law will come. So far as the industry is concerned, the real choice probably is whether the change will come about as a result of the industry's own voluntary and united effort, or by being imposed upon it through an increasing measure of governmental control. The extent to which the industry may continue to enjoy control over its affairs in general, therefore probably depends largely upon the manner in which this change is effected.

PLAN TO FIGHT TAX EVADERS

DENVER, Colo., Sept. 2.—Methods of fighting the gasoline bootlegger were discussed by representatives of seven western states at a two-day conference here this week. The states were Colorado, Nebraska, Kansas, Wyoming, Missouri, New Mexico and Oklahoma. F. V. Martinek, of Chicago, chairman of the central gas tax evasion committee, outlined the work being done by his organization. Uniform state laws were recommended by him as the best line of attack on gasoline bootleggers. The Kansas plan, which includes a system of ports of entry and subports, is being copied by several states. Haulers of liquid fuel in Kansas must obtain clearance papers from a port of entry before leaving or entering the State. Tank trucks leaving refineries must also be cleared by state officers.

Modern Cleaning Out Methods Will Improve Ultimate Oil Recovery of East Texas Field

By L. G. E. BIGNELL
Petroleum Engineering Editor

As long as East Texas wells were flowing naturally the operators have found little occasion to do much cleanout work. However, it may be that because of the fact that none of the recently drilled wells has ever been permitted to flow to its full capacity for even a limited time there is still a considerable quantity of rotary mud and settlings in the hole. Under normal conditions the hole has been drilled into the formation only deep enough to make a well and after being washed in has been permitted restricted flow for a short time and then put upon prorated production.

Every operator knows that wells produce best if they are permitted full open flow at least during some portion of their natural producing life. Such flow will remove settlings from the hole, will clean the sand of loose particles and flush the well in such a manner as to permit of the oil and gas to have free access to the bottom of the hole and to the top of the flow string.

Operators who have strictly observed proration rules have actually been placed at a disadvantage because those who did produce their wells wide open set up drainage toward those wells that is beneficial. They removed the oil and gas as rapidly as it entered the hole and established areas of low pressure immediately around their wells. This had a tendency to create drainage toward the low pressure area and the openings within the formation have been flushed by the rapid movement of the oil and gas through them.

It would therefore appear that there are really two classes of wells in East Texas at this time, those that have at some time been produced to their full capacity for a period of time, and those that have always been produced under strict proration orders.

Judging from experience in the Woodbine sand wells of Powell, Mexia and Wortham where practically all wells were produced wide open during the early part of their life, it seems safe to assume that the wells in East Texas that have been flowed wide open will not require much cleaning when they are put on the pump. Wells not so produced will probably be benefited by a thorough cleanout before being placed upon mechanical production.

Cleanout Methods

When a rotary well is completed so far as drilling the hole is concerned it has been general practice in East Texas and other fields to wash the rotary mud from the hole with fresh water. It has been assumed that by introducing fresh water under pressure into the hole and forcing the column of mud out that the face of the sand has been cleaned so that the oil and gas can enter freely.

The only practical test that has been applied to East Texas wells since they have been restricted as to rate of daily allowable per well has been to gauge the flow of oil into a tank for a limited period to estimate the well's capacity to produce its daily allowable. When wells capable of making upward of 20,000 bbls. of oil per day have been allowed to flow only a few hundred or perhaps a thousand or so barrels of oil it certainly has not established full flow conditions at the bottom of the hole.

It is known that in some wells water has existed at the bottom of the hole but it has not appeared with the oil as produced. This water has been secured by bottom hole sampling and because of the slow rate of production has not come to the surface with the oil. But it is there and it is therefore logical to assume that other foreign material may be at the bottom of the hole and will remain there until the hole is cleaned by some mechanical means.

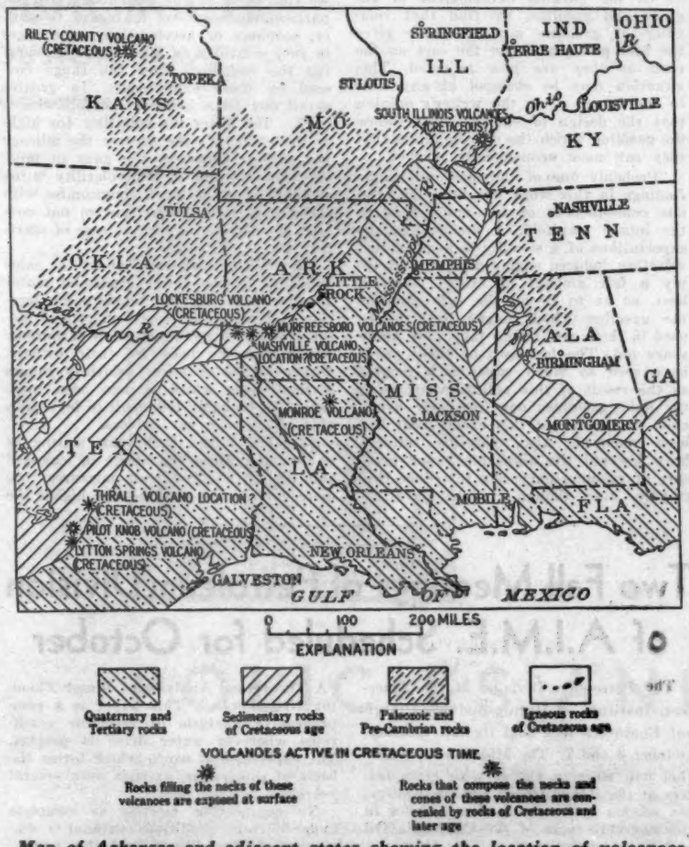
Bailing is a common method of cleaning holes. There are two general types of bailers used, the common type with a dart and valve at the bottom of the bailer pipe, and the sand pump and suction type which draw the foreign material into the bailer by application of some mechanical device.

When the common type bailer is used it is usually necessary to drill up the settlings with a light string of tools. In cable tool fields a light string of tools is used for this purpose, but in East Texas where the rotary was used exclusively for completing the well a light rotary outfit is sometimes used to stir up the sediments in the bottom of the hole.

Swabbing will sometimes create enough pull upon the formation to remove part of the settled material. When the swab is pulled up in the flow string there is a tendency to create a partial vacuum below the swab and the well pressure then equalized this vacuum and in this operation high differential pressures are available at the bottom of the hole. This will tend to increase velocity of fluid movement with a flushing action that will move the debris at the face of the sand and carry it upward with the fluid column.

Many operators in East Texas are using portable cleanout units. They consist of winches mounted upon tractors or trucks and powered by the automotive engine. They will operate swabs or bailers and in a few instances this portable type unit has been used to give motion to a string of light drilling tools used in cleanout work. After the settlings have been stirred up either the common or special type bailer is used to remove them from the hole.

Some companies in East Texas have purchased special light rotary outfits that can be operated from the power unit at the pumping well. These outfits consist of a turntable driven by sprocket and chain from a special takeoff on the drawworks. When the special drawworks sprocket is supplied the portable rotary unit can be moved from well to well as necessary.



Map of Arkansas and adjacent states showing the location of volcanoes that were active in Cretaceous time and the exposures of igneous rocks of Cretaceous age. From U. S. G. S. Professional paper 154-F.

Volcanic Ash or Bentonite

In practically every part of the East Texas Field cores recovered from wells have shown a material that has been classed as volcanic ash. Some geologists have recognized bentonite, which is volcanic ash changed to a plastic clay and now commonly used as a weighting material in rotary mud under the trade name Aquagel.

U.S.G.S. Professional Paper 154-F, "Water-Laid Volcanic Rock of Early Upper Cretaceous Age in Southwestern Arkansas, Southeastern Oklahoma and Northeastern Texas," by C. S. Ross, H. D. Miser and L. W. Stephenson, describes the volcanic ash and bentonitic clays examined in the outcrop of the Woodbine formation in the area covered by the report.

The accompanying map locates the old volcanoes from which this ash came and it is from this same source that the volcanic ash reported in the East Texas well cores originated. The volcanic ash has been segregated into several igneous rock mineral classes, among them being glassy pumiceous tuff.

The report states: "Throughout most of the Arkansas area the glassy pumiceous tuff of the Woodbine formation has been altered to a bentonite that contains a large proportion of igneous-rock phenocrysts and detrital rock fragments, but locally calcite concretions have formed in the pumic tuff soon after deposition and prevented the formation of bentonite.

"Bentonite is a rock composed predominantly of clay and formed by the alteration and devitrification of glassy volcanic material, usually a tuff. It generally contains differing proportions of igneous-rock phenocrysts and admixture detrital debris. * * * The mineral is plastic and has a micaceous habit and high birefringence.

Conditions Not Well Known

"The conditions that promote the change of volcanic glass to bentonite have not been well known, but mineral relations in the Arkansas area permit some deductions as to the physical environment that favored the change. The development of bentonite was not due to surface weathering but to causes that affected all glassy materials at all observable depths, and in the same beds feldspar, all ferromagnesian minerals, and fragments of lithic tuff are commonly altered. The lime concretions that were formed in the tuff beds have preserved very delicate pumic fragments with uncollapsed bubble walls, and evidently the infiltrating calcium carbonate was introduced before the formation of the bentonite. The calcium was no doubt transported as bicarbonate, and it is quite probable that the water was bicarbonate bearing throughout the period of alteration.

"The ash fell in a marine embayment, and the entrapped water may have remained saline during alteration, but it is impossible to determine the degree of dilution with fresh water. The ash fell in water, and calcite concretions were present when the alteration took place, and threfore volcanic gases and acids stronger than the dissolved carbon dioxide were not present and could have had no part in the alteration. It seems equally certain that organic or so-called humic acids were absent, for no extensive plant remains are associated with the beds, and a very great thickness of material has been affected by the processes of alteration.

"The known factors of alteration were the absence of oxidising conditions, the presence of water for hydration, the removal of excess chemical constituents, and the probable presence of bicarbonates, sodium chloride, and possibly of magnesium salts from the sea water. Calcium carbonate and iron carbonate leave a record of their transportation probably as bicarbonates, but soluble alkaline bicarbonates would leave no such record and so may or may not have been present.

"The absence of sulphate minerals like gypsum indicates that sulphates were absent or practically absent from the solutions. No other factors suggest themselves that are likely to have contributed

(Continued on Page 44)

Close Co-operation Between Automotive and Refinery Engineers Shows Favorable Results

By ROBERT C. CONINE
Chicago Bureau, The Oil and Gas Journal

CHICAGO, Sept. 5.—Petroleum refiners are leading the way for the automobile designers and manufacturers, and are making great progress possible in the Diesel field. That is the unanimous verdict of members who read papers at the Society of Automotive Engineers International Automotive Engineering Congress here August 28 to September 4, to an attendance of 1,200.

While motor fuel and lubricating oil and grease economy and the means available for reducing consumption of these products featured in the discussions, the engine designers and petroleum technologists were agreed that the motorist must choose between low fuel and oil consumption and desirable performance. The comparative cheapness of motor fuels, engineers pointed out, is responsible for the modern high performance automobiles and their popularity in spite of their lower fuel economy. By careful and frequent adjustments the sacrifice in economy can be reduced to a minimum. it was pointed out, and an accurate and simply operated instrument for analyzing combustion characteristics in internal combustion engines at the service station was explained.

Doctor Bridgeman on Gasolines

Dr. Oscar C. Bridgeman, of the Bureau of Standards, read a paper on the effects of differences in fuel characteristics in connection with general engine design factors, operating conditions and desired performance characteristics. Doctor Bridgeman pointed out that the larger consumers will purchase the cheapest fuel which is noncorrosive, which has sulphur and gum content within the permissible limits. This gasoline will be the cheapest fuel having the desired octane number, although this is not a basic consideration since considerably more intense knock than the driver will ordinarily stand may occur without appreciable sacrifice in performance. After eliminating the above mentioned properties from consideration, Doctor Bridgeman discussed specific gravity, vapor pressure and volatility as the three properties of the fuel which affect fuel consumption. He pointed out that while it is a basic fact underlying the theory of internal combustion engine operation that the higher the specific gravity of the fuel, the smaller will be the fuel consumption in gallons per mile, it is not unusual for other changes to occur with changes in gravity which may affect fuel consumption much more than would variations in gravity.

Doctor Bridgeman said that vapor pressure, which determines the evaporation loss in supply tank, vacuum tank, and fuel lines, may account for as much as 20 per cent of fuel loss. The blame for high vaporization losses is placed on the automotive engineer by Doctor Bridgeman, who says that fuel lines can readily be designed and installed so as to reduce fuel line temperatures, while the vacuum tank is a notorious cause of fuel loss. According to Doctor Bridgeman, selection of a fuel with a low 10 per cent point lessens the fuel consumption during starting, an operation generally accounting for considerable waste, but while the low 10 per cent point is desirable from the standpoint of starting, it sets up a conflict on the point of desirability of a gasoline of low vapor pressure, and a compromise must be reached. The more volatile gasoline will show lower fuel consumption during acceleration due to the leaner carburetor setting permissible. Compromises to be made are between low vapor pressure and high volatility, between vapor pressure and 10 per cent point temperature, and between volatility and gravity.

Modern Volatile Fuels Best

Neil MacCoull, of the Texas Co., read a highly interesting paper on the "Effect of Gasoline Volatility on Engine Economy." Summing up Mr. MacCoull's findings may be done best in his own words:

"In the parallel development of engines and gasoline, we find that volatility of gasoline now available gives the best performance in the cars on the road as they are now adjusted. This situation may be changed at any time in the future. It is the writer's opinion that the design of engines must follow the gasoline which the oil companies find they can most economically market.

"Probably one of the most important findings in this work has been the serious consequences of too much heat to the intake manifold. A decade ago the expectations of a steadily decreasing fuel volatility induced engine designers to apply a fair amount of excess manifold heat, so as to be on the safe side for the gasoline which might have to be used in their cars before they were many years old. The last two or three years have seen so much vapor lock trouble as the result of this policy, when using the light gasolines now regularly available, that much of this excess heat has been removed. Also, gasoline refiners have lowered the allowable vapor pressure of gasoline purposely to reduce this trouble, even though it may have reduced the ease of starting in cold weather. There is still, however, a strong temptation to provide excess heat because it reduces the warming up period for a cold engine. Against this should be balanced the fact that raising the mixture temperature in an engine 100° F. above the minimum required for good distribution may produce a power loss of about 13 per cent, and raise the antiknock requirement about 10 octane numbers.

"A second point of considerable interest in this work was that motor cars as we find them on the road today, are not particularly sensitive, in regard to power, economy or acceleration, to changes in fuel volatility as represented by varying the endpoints over the range covered by these experiments. In greater detail our tests indicate the following:

"1. The lower the volatility (or higher the endpoint) the greater the mileage per gallon. However, the gain in mileage from gasoline of low volatility is too small to warrant much compromise with other important characteristics not covered by these tests, such as ease of starting, etc.

"2. With gasolines of about the same volatility as the better grades of motor gasoline now on the market, acceleration and power developed on typical motor cars are a maximum, with carburetor adjustments as used by their owners. Either higher or lower volatility causes a small loss which it has been mentioned, is probably too small to be noticeable to average car drivers.

"3. The initial carburetor setting of a car may alter the effect of changed volatility: (a) For lean mixtures, the more volatile the gasoline, the higher the mileage per gallon; (b) for rich mixtures, the more volatile the gasoline, the lower the mileage per gallon; (c) with an optimum mixture for each gasoline, the more volatile a gasoline, the less the mileage.

"4. Both power and fuel economy can be increased noticeably with increased gasoline volatility, if an engine is designed for that particular fuel, so as to have the least manifold heat necessary for manifold distribution, and the highest compression ratio possible without detonation."

Public Wants Peppy Gasoline

J. B. Macauley, of Chrysler Corp., was able to state, from experience, that the average American automobile owner does not want economy, or rather, that he wants a number of other things more than he wants economy and has shown it by his buying preference repeately. Mr. Macauley said that he would hate to try to sell the average motorist an automobile designed solely from the standpoint of motor fuel economy. "Better fuel economy, gentlemen, is just around the corner, if the driver wants it. Up to date, I, for one, see no sign that the average buyer is willing to sacrifice performance to get it."

Mr. Macauley in his paper pointed out that aside from the normal losses of the Otto cycle conversion, the energy supplied to the engine is dissipated through four major channels, wastage, engine friction, chassis friction and air resistance. He states that the fuel available is improving in volatility, particularly so far as the first 10 per cent on the distillation curve, aiding starting, and thermostatic manifold heat controls, thermostatic control of the jacket water temperature, and cold room studies on mixture ratios for starting and electrical equipment for increased cranking speeds are helping to solve the wastage problem. A second source of wastage is the excess supplied by the carburetor to cover production variations in intake manifolds, and to provide the slight excess at low speeds which makes for quick stabilization of operation at low speeds. Mr. Macauley went on to state that 50 per cent of the horsepower developed by the engine at 40 m.p.h., is used in overcoming engine friction. There is a tendency, he said, on the part of the average operator to use engine oils of higher viscosity than are necessary for the service involved. The hard driver needs an oil which will hold its viscosity under high operating temperatures, but many owners use oils which are too heavy for the service demanded, particularly in winter, and pay for it in gasoline. Chassis friction at 40 m.p.h., uses about 21 per cent of the engine power, and the tendency in tire equipment toward larger sections and lower pressures is a move toward comfort which must be paid for by increased rolling resistance and decreased fuel mileage.

Mr. Macauley cited an instance in which a fleet operator increased his tank mileage 30 per cent, by sacrificing performance characteristics such as "fast get away," and loss in top speed.

Combustion Analyzer

L. T. White, of Cities Service Oil Co., explained the workings and merits of a prompt acting combustion analyzer in operation at many of his company's service stations to enable customers to keep

(Continued on Page 33)

Two Fall Meetings of Petroleum Division of A.I.M.E. Scheduled for October

The Petroleum Division of the American Institute of Mining and Metallurgical Engineers will hold its fall meetings October 6 and 7. The Mid-Continent section will meet in Dallas with headquarters at the Baker Hotel, and the California section will meet at Los Angeles in the assembly room of the California Oil and Gas Association.

These meetings will be of special importance to engineers and research workers who are connected with the oil industry since several papers will be presented by noted specialists in their particular fields.

Prof. W. K. Lewis, head of the department of chemical engineering at Massachusetts Institute of Technology, will discuss the subject, "Physical-Chemical Relationships of Hydrocarbon Gas-Liquid Mixtures at High Pressures." The development of oil and gas in deep horizons where pressures far in excess of critical values are encountered has made it imperative that engineers have a comprehensive knowledge of the behavior of gases and liquids under high pressures. Professor Lewis is an authority along this particular line and his research work is of such a fundamental character that production engineers consider it an exceptional opportunity to hear his presentation and join in the discussion.

Another fundamental paper by M. Muskat and R. D. Wyckoff of the Gulf Research & Development Corp. is entitled, "A Theoretical Analysis of Water Flooding Net Works." This paper is a comprehensive analysis of reservoir conditions wherever water drive is present. The experimental work, which forms the basis of this paper, extends over several years.

No engineering meeting is complete under current conditions without a discussion of East Texas, and this particular subject will be discussed by George N. Nye of the Tide Water Oil Co., "Recent Changes in Reservoir Pressure Conditions in the East Texas Field." Several other papers of importance are also scheduled and it is planned to devote one session to a discussion of the problems associated with estimation of natural gas reserves.

William E. Wrather of Dallas, who is chairman of the Petroleum Division, has received word from New York that Dr. F. M. Becket, president of the Institute; A. B. Parsons, secretary, and E. J. Kennedy, Jr., assistant secretary, will be present at the Dallas meeting.

At the California meeting the following papers will be presented: "Vertical Flow of Oil and Gas Mixtures," by J. E. Gosline of the University of California; "Water Drive Problems," by Victor Wilhelm of the Texas Co., and another paper, "Middle Dome of Kettleman Hills," by Joseph Jensen of the Associated Oil Co. In the case of both meetings an evening session, Friday, October 6, will be held following an informal dinner.

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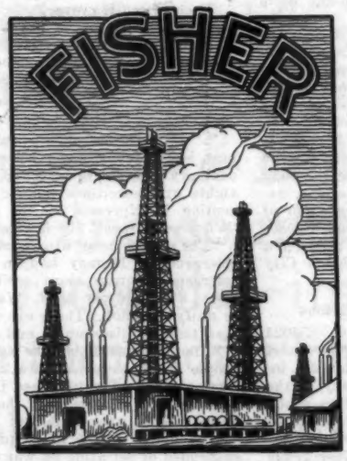

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Definitely in tune with the times to further strengthen Fisher service in the great Southwest and Mid-Continent areas, the above representatives have been appointed. These representatives, combined with the initiative of a highly specialized engineer, C. D. Peterson, who has had nine years experience in the design, operation, and service of automatic controls at the Fisher factory, and who will be permanently located in Tulsa, will fulfill every requirement for engineering service on Fisher specialties

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Administration and Effect of the Recovery Act on Petroleum Industry From Legal Viewpoint

By PETER Q. NYCE
Of Long, Chamberlain and Nyce, Washington, D. C.*

Several attempts have been made to secure Federal regulatory legislation to control production by compact and otherwise among the oil producing states. This legislation has failed of passage. The power vested in the President of the United States by the National Recovery Act embraces such control.

Section 3 of that act provides for codes of fair competition for industry, which includes petroleum, and this will be discussed hereinafter.

Section 9, subsections (a), (b) and (c) of the act deal exclusively with oil regulation.

Section 9 (a) provides that:

"The President is further authorized to initiate before the Interstate Commerce Commission proceedings necessary to prescribe regulations to control the operations of oil pipe lines and to fix reasonable, compensatory rates for the transportation of petroleum and its products by pipe lines, and the Interstate Commerce Commission shall grant preference to the hearings and determination of such cases."

Provision Not Clear

A careful reading of this section impresses one with its indefiniteness. It authorizes the President to ". . . prescribe regulations to control the operations of oil pipe lines and to fix reasonable, compensatory rates for the transportation of petroleum. . . ." It is not clear whether this provision amends or modifies the present existing Interstate Commerce Act of February 28, 1920 (41 Stat. 474) involving common carriers engaged in the transportation of oil by pipe lines, or permits the President to prescribe regulations to control the operations of pipe lines through the medium of the Interstate Commerce Commission under the National Recovery Act. Whatever may be the power of the President under this section, he has not invoked that power and the Interstate Commerce Commission is powerless to act except by direction of the President.

Section 9, subsection (b) provides that:

"The President is authorized to institute proceedings to divorce from any holding company any pipe line company controlled by such holding company which pipe line company by unfair practices or by exorbitant rates in the transportation of petroleum or its products tends to create a monopoly."

The substance of this provision was contained in a bill embracing other important clauses involving conservation of crude petroleum (H.R. 5695, 73d Congress, 1st session) introduced by Representative Marland of Oklahoma. The President has not utilized the power authorized under this section and because of the comprehensive code of fair competition for the petroleum industry, which has been approved by him, it is doubtful whether the provision will ever be invoked.

Section 9, subsection (c) provides:

"The President is authorized to prohibit the transportation in interstate and foreign commerce of petroleum and the products thereof produced or withdrawn from storage in excess of the amount permitted to be produced or withdrawn from storage by any state law or valid regulation or order prescribed thereunder, by any board, commission, officer, or other duly authorized agenecy of a state. . . ."

Pursuant to this authority, the President on July 11, 1933, promulgated an executive order prohibiting "the transportation in interstate and foreign commerce of petroleum and the products thereof produced or withdrawn from storage in excess of the amount permitted to be produced or withdrawn from storage by any state law or valid regulation or order prescribed thereunder, by any board, commission, officer or other duly authorized agency of a state."

On July 14, 1933, a further executive order was promulgated and in this order the President authorized "the Secretary of the Interior to exercise all the powers vested" in the President by Congress, for the purpose of enforcing Section 9 (c), "including full authority to designate and appoint such agents and to set up such boards and agencies as he may see fit, and to promulgate such rules and regulations" as the Secretary might deem necessary.

In compliance with the executive order, the Secretary of the Interior on July 15, 1933, promulgated general rules and regulations. Certain changes, amendments and additions to the regulations were promulgated under date of July 25, 1933, and on August 2, 1933, having determined that the enforcement of the executive orders did not require the complete application of the regulations, except in certain regions, the operation of such regulations was limited and extended and made to apply, for the most part, only in East Texas and Oklahoma City areas.

Litigation Involving Regulations

On August 3, 1933, a petition (56024 Equity) was filed in the Supreme Court of the District of Columbia for an injunction to prevent the Secretary of the Interior from carrying out the President's order. The case was filed on behalf of Southport Petroleum Co., Longview, Tex., and 48 other refineries in the East Texas oil field. The case was set for hearing August 15, 1933, and immediately thereafter Justice Joseph W. Cox of the Supreme Court of the District of Columbia rendered his decision upholding the validity of the regulations promulgated under the above subsection of the National Recovery Act, denying the petition for injunction. This was the first court decision involving the validity of the act.

The principal argument in support of the petition for injunction was that the act of Congress was unconstitutional for the reason that it was an attempt to delegate power to the President of the United States which cannot be delegated but must be exercised by Congress alone, and whether the President, having been vested by Congress with authority to prohibit the transportation of petroleum could in turn delegate to the Secretary of the Interior the power to promulgate rules and regulations. The acting solicitor of the Interior argued that the Secretary was acting directly for the President and so acting could not be enjoined or restrained.

This contention was sustained by Justice Cox, who in his decision expressed it as his opinion that the promptness of the decision was more important than the reasons for it or perhaps, its correctness.

According to the court:

". . . In time of war, which is the best known emergency, the most extraordinary powers are exercised, and sacred rights are sometimes ignored. The conception is expressed in the old maxim, 'When arms speak, the laws are silent.'

"The same concept also extends to other emergencies. It may happen that other emergencies prove more perilous to national life than war itself. War may tend to unify a nation. There are emergencies that tend to disorganize and to destroy.

"Another maxim is 'The safety of the people is the supreme law.' This conception must have its place in our laws dealing with emergencies that threaten national safety or stability. While the courts hold that the Constitution is not suspended or set aside by war or national emergency, it is thought that the Constitution and all other laws must be read in the light of, and, to some extent, subject to, the primal and fundamental concept of the necessity for selfpreservation.

"Here we are facing a national emergency declared to exist by the legislative department, which has invested the President with power and authority to meet it. Every presumption is in favor of the authority so granted to the President. The argument on behalf of the plaintiffs has failed to show that the authority conferred under Section 9 (c) of the National Recovery Act, the exercise of which is here complained of, is not appropriate or adapted to the purpose for which it is granted, or beyond the powers arising under the Constitution. The court will not lightly exercise its power in any way to complicate the problem of the legislative and executive departments in the present emergency. . . ."

Thus the court says that in times of emergency even the Constitution is subject to the laws of necessity.

It is interesting from a legal standpoint to compare the action taken in this case and the action of the Supreme Court of the United States in the case of United States ex rel McLennan vs. Wilbur, 283 U.S. 414; 75 L. Ed. 1148, sustaining the Secretary of the Interior in refusing to grant oil and gas prospecting permits on the public lands pursuant to the authority vested in him in the General Leasing Act of 1920 (41 Stat. 437). There, the word "authorized" to grant permits was held not to bind him to issue permits without exercising a reasonable discretion to refuse to issue them.

That case arose as a result of an executive order of former President Hoover, issued shortly after his inauguration, to the effect that during his administration there would be complete conservation of oil and gas. Immediately thereafter, and in order to effectuate the conservation policy of the President, the Secretary of the Interior promulgated a general order rejecting all applications for oil and gas permits then on file and refusing to receive other applications.

It was urged that the Secretary was there acting for the President in furtherance of his conservation policy and the courts could not interfere with executive action. The decision of the Supreme Court was based rather upon the point that mandamus will not issue unless the duty to be performed is ministerial and the obligation to act peremptory, and plainly defined.

The Code

Under the National Industrial Recovery Act, the code for the petroleum industry was submitted to Gen. Hugh S. Johnson, administrator, Washington, D. C., on July 13, 1933.

Lengthy hearings on the subject matter of the code were conducted by the administrator in the hope that various conflicting views might be reconciled and a code satisfactory to all be approved. After weeks of effort the representatives of the petroleum industry, realizing the hopelessness of reaching an agreement within the industry, especially on price-fixing and production control, asked that the administration draft a code. In approving the code, the President, in a letter addressed to General Johnson, stated:

". . . one substantial group within the industry has also submitted some proposed amendments agreeing, however, to abide by my decision as to their acceptance. You have advised me that there are some other provisions of the code which require further consideration.

"The code, as agreed to by all its proponents, provides for a representative planning and co-ordinating committee of the industry. In view of the fact that we

(Continued on Page 48)

*Address delivered before the Mineral Law Section of the American Bar Association at Grand Rapids, Mich., August 29, 1933.

Pipe Line Contractors of Nation Form Code and Present It to the President

At a special meeting of the members of the Associated Pipe Line Contractors of America, held in the offices of the association in the Exchange Bank Building, Tulsa, Tuesday, August 29, to consider the necessity for and to formulate a code of fair competition for the pipe line industry, it was decided that it was imperative that the Associated Pipe Line Contractors of America formulate and present to the President of the United States, for consideration, a code to effectuate the purpose and policy of Title 1 of the National Industrial Recovery Act and to express a desire to co-operate to the fullest extent with the President and national recovery administration, in order to expedite the success of this movement.

In transmitting this code to the President, the association expressed a request that the code submitted be approved, accepted and designated as the basic code governing the activities and operations of pipe line contractors; also, that this code be used as the basis of rates of pay and hours of employment in connection with all pipe line construction projects.

The Associated Pipe Line Contractors of America will be represented at any hearings had on this code by able representatives with many years of experience in pipe line construction work.

Officers of the association are S. M. Williams, Jr., president; John B. Sheehan, vice president, and G. E. Matt, secretary. The directors are S. M. Williams, Jr., of Williams Brothers, Inc., chairman; J. J. Connor, Connor & Son Construction Co.; O. E. Dempsey, Kelly Dempsey & Co.; L. H. Favrot, Apex Construction Co.; John B. Sheehan, Sheehan Pipe Line Construction Co.; C. B. Stewart, Mitchell-Stewart Construction Co., and J. C. Truman, Truman Smith Construction Co.

Already 27 construction firms throughout the United States have signed for membership in the association or have agreed to become members.

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THE OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPELINE MARKETING

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(For representatives' complete addresses, see contents page)

Member, Audit Bureau of Circulations

A Fair Trial at Last

Proration is at last to be given a fair trial. Its advocates have insisted from the beginning that curtailment of production to demand would stabilize the market at a fair price. The argument of critics that falling prices proved proration a failure was always met with the answer there has never been a fair trial of proration honestly enforced.

Now, if Secretary Ickes' position is maintained we may have such a trial.

After hearing the recommendations of the co-ordinating committee, at the hour when the code signed by President Roosevelt was to become effective, Mr. Ickes simply decided to put the rest of the code into effect and hold back the price-fixing section until later.

Crude oil production is to be limited to 2,409,700 barrels daily, the quantity estimated required by demand. Two million barrels daily heretofore was spoken of as the limit but that assumed a further supply from "hot oil," from withdrawals from storage and from imports.

Mr. Ickes suspends withdrawals from storage for the time being; imports are to be restricted, and "hot oil" is to be prohibited by control of interstate commerce, the oil formerly supplied by those three sources now being added to the production allocation.

The allocation by States, liberal to Texas, has been welcomed by the State Railroad Commission, presumably assuring full co-operation. California not having a state regulatory commission, the Central Proration Committee has been designated to make the allocations within that State.

The stage is thus set for a thorough test of proration. The producing states must stay within the allocations set by the government or consume their excess crude within their borders.

For the first time, if this works out, we shall have production of crude approximately restricted to demand. The elimination of excess production which has been used by "hot oil" and cut-price competition to break down the market will allow a living price for the legitimate supply limited to requirements.

This was the theory upon which proration was built, a theory, however, that never had a chance for demonstration because of the failure to stop overproduction. The better prices promised with proration were never realized, although it is clear that without even such proration as we had the situation would have been much worse.

That is the background to the situation today. Mr. Ickes, and presumably President Roosevelt, believe in proration. Curtailment of production to demand is the keynote of the administration's policy in dealing with the overproduction of cotton and other agricultural products. They believe that the removal of excess production will restore prices to normal and put the farmer back on his feet.

Mr. Ickes evidently wishes to try the same process on oil production. Personally he has been credited with favoring price fixing, if unavoidable, but, with President Roosevelt, he would prefer to interfere as little as possible with the legitimate operations of industry if oil men will show themselves able to run their own business.

He told the Committee of Fifteen they were there to devise rules for managing the industry and to make recommendations to him. Only in the event of complete failure on the part of the industry will the government take it in charge.

The industry had failed to make proration stick because of lack of co-operation within the States. The government issued its ban on the transportation of "hot oil" to help the industry enforce proration. Now it has gone a step further by fixing a limit for production and allocating it among the producing States with the proviso that production in excess of the allocation will not be allowed to be transported outside a State.

What will be the result? With 300,000 barrels daily less crude available, the market must be strengthened. This strengthening must be reflected in the gasoline market if no longer menaced by "hot oil" and tax evading competition. In turn a stronger gasoline market should improve the crude market.

If it can be worked out that way, the industry may congratulate itself on retaining self-government and avoiding entrance upon an experiment foreign to its whole traditions and leading inevitably to increasing restriction.

There are, of course, difficulties in the way. The main season of gasoline consumption is drawing to a close. Stocks are heavier than they ought to be at this season. The gasoline tax, State and Federal, now averaging 5½ cents a gallon, is a staggering deadweight to carry.

Far from any "gouging of the consumer" the industry will do well if it even approximates a fair return including the increased costs imposed by the acceptance of the code.

The real "gouging of the consumer" is done by his political guardians when the tax collector takes 5½ cents from him for every gallon of gasoline he buys.

If balancing production and demand enables the oil industry to increase employment and payrolls, the consumer will be encouraged by the hope that he will share equally in the restoration of prosperity.

He has no such confidence in benefits from the six hundred millions annually poured into the gasoline tax rathole.

Excessive taxes on gasoline have not only been a drain on the consumer but a large factor, through evasion, in aiding the price-cutter to drag down the industry.

If the industry cannot establish and maintain living prices through stabilization of supply and demand, because of lack of co-operation by the states or by reason of chiseling and cheating by individuals, then it may as well prepare for governmental price-fixing from the well to the filling station, production, transportation, refining and distribution.

One way to avoid that would be the determination of cost of recovery and production below which no sales would be permitted, leaving prices to be determined by the free play of honest competition.

Mr. Ickes appears to have given the industry a choice. We are going to get controlled production anyhow. It is essential to the establishment and maintenance of any price system whether by the industry or by the government.

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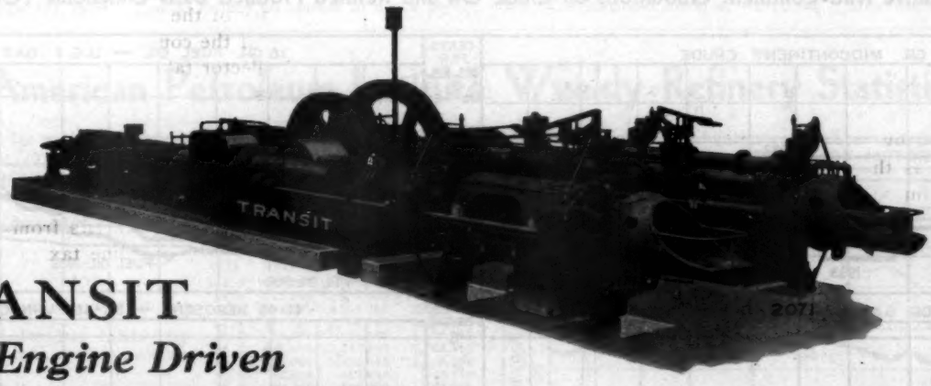

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Mid-Continent Refinery Market Strong as Result of Higher Crude and Retail Gasoline Prices

By W. T. ZIEGENHAIN

Sales managers for Group 3 (Oklahoma) refiners returned to their desks on Tuesday following three days of market inactivity with genuine optimism in regard to the immediate future of prices.

On September 2 they saw the oil code go into operation without the President having named a minimum price for gasoline, which was considered disappointing by some but they did see definite progress made in the movement to curtail crude production to current needs, under the code, which is a basic requisite to higher prices. They also witnessed a falling off of competition on the part of East Texas plants, another 10-cent advance in Mid-Continent crude prices posted by the Continental Oil Co. and Carter Oil Co. and assurance that the program to restore oil prices to a normal level was definitely in operation.

Gasoline strengthened on Tuesday and promised to move higher over the balance of the week. Natural gasoline reflected the improvement made in the refinery gasoline market and all other products were firmly held at last week's price level. Fuel oil prices were especially strong with a likelihood of a higher price level being established before the close of the week. An exceptionally favorable movement of motor oils and bright stocks from several of the larger manufacturers in the Mid-Continent took away any chance of the slow moving domestic market weakening quotations.

Cars on Leased Tracks

The only factor tending to dampen the efforts to raise gasoline prices over the immediate future is the relatively large volume of the material being held by jobbers and refiners on leased tracks. This material was moved from East Texas in large volumes over the past week particularly on Thursday and Friday and estimates of the total volume now standing in the yards range from 1,200 to 4,000 cars.

A careful survey of the volume thus held accounts for 1,200 cars as of Friday. The more conservative students of the market place the probable volume thus held at 1,500 to 1,800 cars most of which is in the Chicago territory.

The procedure through which the jobber or refiner went in order to place himself in a position to do this included the granting of rather unusual concessions on the part of the railroads.

There is no question that the railroads are privileged to lease idle industrial trackage, and no doubt there is plenty of such space available over the country but there is not enough to provide room for all the gasoline refiners might like to have moved from their plants in anticipation of the accounting for refinery stocks, shipments, production, etc., under the code. On the other hand, to do so, is a violation of the spirit of the code.

Because the leasing of such trackage could be participated in by so few, many traffic men contend that the railroads are violating the purposes if not the letter of the rules of the Interstate Commerce Commission.

There apparently is no question that refiners and jobbers may lease this trackage and hold gasoline there indefinitely providing the yard space is under lease in the same name as that appearing as owner of the gasoline.

While the gasoline stands on the tracks it draws no demurrage and may be reconsigned upon the payment of a charge of only $6.30 per car. Some of the gasoline so held is said to have been purchased by an individual active in the Mid-Continent jobbing circles and that he arranged for the deferred payment for the material with the refiner. These details are mentioned here to indicate how involved the problem becomes when it is studied as a probable factor in the spot market over the immediate future.

Encouraging Factors

In the past week gasoline retail prices were advanced over a wide area. A general advance of one-half cent was posted throughout the marketing territories of the Atlantic Refining Co. on August 26. On the same date a similar advance was posted by the Standard Oil Co. (New Jersey) and the Standard Oil Co. of Louisiana. In both instances the advance was followed on September 2 with another one-half cent advance. However, at the same time the 2-cent discount for cash was discontinued. The effect on the cash price throughout the territories of

Refined Market Barometer

A sharp advance in the gasoline price throughout the Mid-Continent late Tuesday climaxed a week of less than normal trading in a majority of the refined oil markets. This improvement followed the posting of a 10-cent advance in the Carter Oil Co.'s crude prices effective on Wednesday. During the week all products had been held firmly by refiners in anticipation of better marketing conditions under the code but there were but few actual price changes outside of the Mid-Continent and Chicago refining points. Advances were posted in Pennsylvania on neutrals and cylinder stocks as a strengthening factor in the entire lubricating oil market.

Mid-Continent.—All refiners advanced gasoline prices late Tuesday. Natural gasoline advanced proportionately. Kerosene strengthened with the balance of the market firm. Wax was quoted up one-eighth cent.

Atlantic Coast.—Improved retail gasoline prices gave strength to the tone of the general refinery market but actual price changes were restricted to minor products. Students of the eastern trading looked toward the Mid-Continent for a clue in regard to the future of price trends.

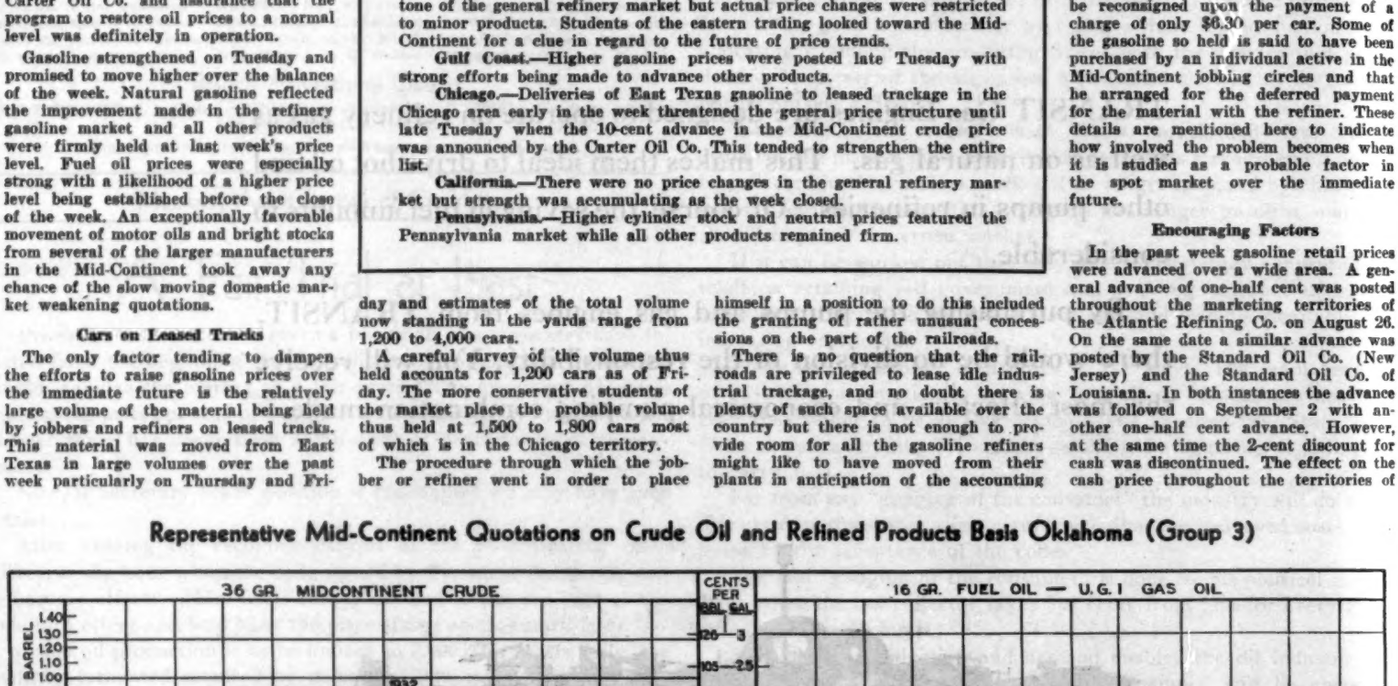
Gulf Coast.—Higher gasoline prices were posted late Tuesday with strong efforts being made to advance other products.

Chicago.—Deliveries of East Texas gasoline to leased trackage in the Chicago area early in the week threatened the general price structure until late Tuesday when the 10-cent advance in the Mid-Continent crude price was announced by the Carter Oil Co. This tended to strengthen the entire list.

California.—There were no price changes in the general refinery market but strength was accumulating as the week closed.

Pennsylvania.—Higher cylinder stock and neutral prices featured the Pennsylvania market while all other products remained firm.

Representative Mid-Continent Quotations on Crude Oil and Refined Products Basis Oklahoma (Group 3)



these two companies was a net advance in price of 1 cent. On August 26 the Standard Oil Co. of Nebraska also announced a one-half cent increase in price.

One of the benefits of the code to the industry was a definite figure established by the President at which crude production must be held. The allowable for the country has been set at 2,409,700 bbls. daily. This is approximately 350,000 bbls. less than the average production for the past four months. It is above the average for 1932 by about 250,000 bbls. daily.

Oklahoma has accepted its quota and the Texas Railroad Commission has indicated that that State would enforce its allowable as suggested by the President. Other states are expected to indicate their acceptance of the part each is to play in the program.

Another constructive factor, but less definite in its immediate application toward price adjustment is the favorable interpretation being placed upon the discussions being held by the Committee of 15 in Washington.

There is a strong effort being made to effect some method of price regulation within the industry despite the decision of the President not to establish a gasoline price on the date the code became effective as had been anticipated. The new regulations will probably revert to the use of the posted crude price as a basis.

A price of $1.11 for 36 gravity Mid-Continent crude is understood to have been strongly considered as the basis. Prices in other fields will be fixed in accordance with their "recovery value" or, more simply stated, in accordance with the volume and quality of the crude likely to be recovered from each particular pool or field. This automatically places the large productive fields on a lower price schedule than the older and less productive fields and if the scheme is carried out it will dampen the desires of producers to open up flush fields as long as there is ample oil in sight. This would operate as an effective stabilizing factor throughout the entire oil market.

Gasoline

Third grade gasoline showed the greatest improvement in price compared with a week ago. The range of the market was 3¾ to 4 cents on Tuesday of this week. This was the direct result of less low octane material being available from East Texas and in turn was brought about by more than 30 refineries being idle in that area.

Refiners in Oklahoma who were holding this grade of material for 4 cents were equally insistent that they be paid the high of the price range for their other grades. The 60-64 octane motor fuel moved in relatively small volume and within a price range of 4¾ to 5¼ cents. Third grade gasoline was being offered out of East Texas in small quantities and refiners there were demanding 3⅞ to 4 cents.

Kerosene and Furnace Oils

Except for the strength shown by the general refined oil market in which kerosene and furnace oils participated, there is little to say in regard to the sale of these commodities. Jobbers purchased supplies of each in advance and any large pickup in demand would have to originate from consumers now.

Natural Gasoline

The 26-70 grade of natural gasoline was firmly held by manufacturers at 3½ cents. The 18-pound material was being held for 4¾ cents and other grades brought proportionately higher prices.

Buyers found it impossible to gain options on any quantity of material for future delivery. Higher prices were anticipated by both groups and the market on Tuesday did not witness as free a movement as would occur under normal trading conditions.

Fuel Oil and Gas Oil

There were but few buying orders for fuel oil but refiners were determined that the market would advance over the immediate future. They point to the approaching fall and winter seasons as a bullish factor and also know that they are on the right side of the argument with a further crude price advance likely to come. The shutting down of a large number of East Texas plants also served as a decidedly favorable factor in the efforts of refiners to hold production to the current market demands.

Lubricants and Wax

A large export order took enough motor oil and bright stock out of the Mid-Continent market within the past week to place current trading on the spot market in favor of the seller. Prices remained unchanged but unquestionably firm. This applied to cylinder stocks and neutrals as well.

Wax advanced to 3¼ cents as the minimum price. Refiners have sold their production for weeks in advance as is customary and future production is expected to bring high prices.

Fuel Oil Refined Abroad May Re-enter Country Without Payment of Duty

The Bureau of Customs has ruled in the form of a letter that where crude oil is exported to Canada and put through a processes of distillation and cracking to obtain gasoline, kerosene, and distillate, the fuel oil and road oil resulting from these processes may re-enter the United States without payment of duty under Paragraph 1,615 of the Tariff Act.

The letter from the acting commissioner of customs to the collector at Great Falls, Mont., follows:

"The bureau is in receipt of a letter from the Northwest Stellarene Co., Inc., advising that their corporation operates two petroleum refineries, one situated near Shelby, Mont., and the other near Coutts, Alberta, Canada, and that the Alberta refinery is operated wholly on crude oil obtained from fields within the United States and shipped to the refinery, either by pipe line or tank car, through ports in your district.

"The Northwest Stellarene Co. explains in its letter and through a representative who has called at the bureau that the exported crude oil is put through processes of distillation and cracking in the Canadian refinery to obtain gasoline, kerosene, and distillate. It is proposed to import fuel and road oil from the refinery into the United States, and inquiry is made as to whether such oil will be entitled to free entry as American goods returned under Paragraph 1,615 of the Tariff Act of 1930.

"The processes which result in the fuel and road oil, as described by the representative of the company, are processes of distillation and elimination. In the distillation process the crude oil is subjected to heat at the proper temperatures for the purpose of producing gasoline, kerosene and distillate, which are drawn off in the form of gases and condensed. The petroleum from which no further gasoline, kerosene, or distillate can be obtained through the distillation process is known as fuel oil. In order to obtain further gasoline, kerosene, and distillate, the fuel oil may then be run through a cracking process, which is carried on under pressure. In this process certain carbons are eliminated by a breaking down of part of the compounds present in the oil, but the process is essentially one of segregation and elimination. The oil left after the removal of gasoline, kerosene and distillate from the cracking process is known as road oil.

"Neither the crude oil, nor the fuel or road oil derived from it, is subject to any cleaning or purifying process, nor to any other treatment than that designed wholly for the extraction of the primary products for which the oil is refined. Both fuel and road oils sell uniformly for a price less than that of the crude to be refined.

"The information before the bureau indicates that the oils to be returned are not a new product of Canadian manufacture, but that they are merely the oil exported, from which certain elements have been removed. This office is accordingly unable to distinguish the case in principle from the rulings of the Court of Customs Appeals, published as T. D.'s 37,200, 37,645, and 37,981, and it is, therefore, of the opinion that fuel and road oils derived abroad from American crude oil in the manner described have not been advanced in value or improved in condition within the meaning of Paragraph 1,615 of the Tariff Act and should be admitted free of duty under the said paragraph upon compliance with its other conditions and the pertinent customs regulations."

INCREASE DEALER DISCOUNT

CHICAGO, Sept. 5.—Retroactive to September 1, the Standard Oil Co. (Indiana) has increased the service station discount to dealers and authorized agents one-half cent.

EXPECT BOOST IN OPERATIONS

The Standard Oil Co.'s natural gasoline plant in the Mountain View Field of Kern County, which was finished about a month ago, is processing approximately 500,000 feet of natural gas per day but will probably show a considerable increase in natural gasoline receipts within the next five or six weeks due to the projected completion of several wells now under way. The Standard's original installation has an initial capacity of 2,000,000 feet of natural gas per day but can easily be enlarged to 5,000,000 feet daily when necessity demands.

American Petroleum Institute Weekly Refinery Statistics

Figures below reported for week by American Petroleum Institute. (1) Per cent refinery capacity represented. (2) Daily average crude runs to stills. (3) Total motor fuel stocks. (4) Gas oil and fuel oil stocks. All figures in 42-gallon barrels.

Week Ending September 2, 1933, Compared to Week Ago

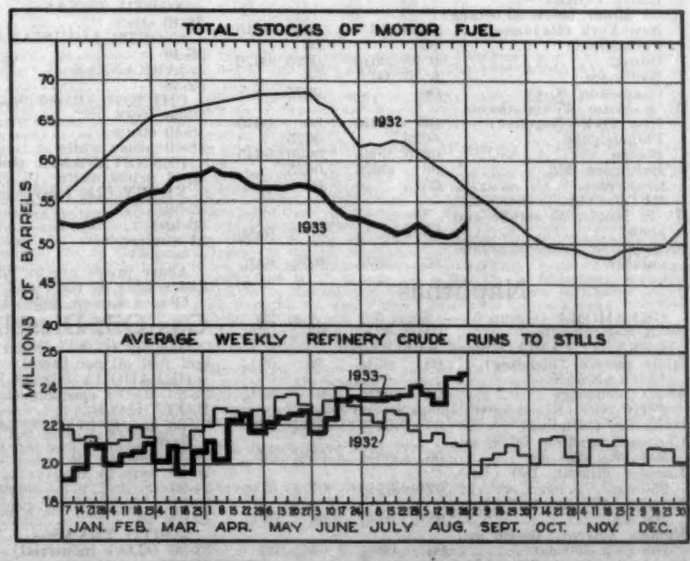
	Week ending August 26, 1933			
	(1)	(2)	(3)	(4)
East Coast	100.0	516,000	15,031,000	9,077,000
Appalachian	92.6	92,000	2,066,000	881,000
Ind., Ill., Ky.	97.3	356,000	6,952,000	5,091,000
Okla., Kans., Mo.	82.1	267,000	5,009,000	3,986,000
Inland Texas	58.7	82,000	1,301,000	1,821,000
Texas Gulf	98 0	473,000	5,503,000	7,369,000
Louisiana Gulf	100.0	131,000	1,421,000	1,944,000
N. La. and Ark.	92.6	57,000	253,000	619,000
Rocky Mtn.	78.8	24,000	885,000	737,000
California	96.9	465,000	14,139,000	100,033,000
Total U. S.	92.2	2,473,000	52,616,000	131,477,000

Due to Labor Day holiday figures for last week are not available.

Week Ending September 2, 1933, Compared to Year Ago

	Week ending September 3, 1932			
	(1)	(2)	(3)	(4)
East Coast	100.0	491,000	15,928,000	9,228,000
Appalachian	91 8	78,300	1,979,000	1,044,000
Ind., Ill., Ky.	98.9	268,300	7,206,000	4,241,000
Okla., Kans., Mo.	89.6	205,700	4,745,000	3,422,900
Inland Texas	76.5	90,300	1,519,000	2,192,000
Texas Gulf	99.8	350,400	4,981,000	9,972,000
Louisiana Gulf	100.0	67,000	1,691,000	4,305,000
N. La. and Ark.	97.0	42,600	204,000	624,000
Rocky Mtn.	89.4	32,300	1,656,000	561,000
California	96.7	426,500	15,475,000	99,357,000
Total U. S.	95 1	1,964,300	55,384,000	134,947,000

Due to Labor Day holiday figures for last week are not available.



Data based on weekly reports of American Petroleum Institute. Figures for week just ended not shown in graph but are included in accompanying table

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement except as otherwise noted

EXCLUSIVE OF TAXES

The following quotations are exclusive of the Federal excise taxes of 1½ cents a gallon on gasoline and 4 cents on lubricating oils, which became effective June 17, 1933.

Refinery Gasolines

	Sept. 5		Aug. 29	
OKLAHOMA (Group 3)—				
*U. S. Motor grades:				
Regular	.04¾	.05¼	.04¼	.04½
Premium	.05¼	.05¾	.04½	.04¾
Third grade	.03⅞	.04¼	.03½	.03⅝
60-62 400 grades:				
Regular	.04⅞	.05⅜	.04⅜	.04½
Premium	.05⅜	.05¾	.04¾	.05
Third grade	.04	.04⅜	.03⅝	.03⅞
64-66 390	.04¼	.04½	.03¾	.04
64-66 375	.04⅜	.04⅝	.04⅛	.04¼
68-70 350	.04⅝	.05	.04⅜	.04½
NORTH TEXAS—				
U. S. Motor grades:				
Regular	.04½	.05	.04	.04¼
Premium	.05	.05¼	.04¼	.04½
Third grade	.03⅞	.04	.03⅝	.03½
60-62 400	.04	.04¼	.03½	.03¾
64-66 390	.04⅛		.03¾	.04
64-66 375	.04½		.04	.04¼
64-66 360	.04½	.05	.04¼	.04¾
†NORTH LOUISIANA—				
U. S. Motor grades:				
Regular	.05		.04½	.04¾
Premium	.05½	.05¾	.04¾	.05
Third grade	.04½	.04¾	.04⅛	.04⅜
60-62 400	.04¾		.04⅛	.04⅜
†ARKANSAS—				
U. S. Motor grades:				
Regular	.05	.05⅛	.04½	.04¾
Premium	.05½	.05¾	.04¾	.05
Third grade	.04½		.04	
CHICAGO (Based on Oklahoma Group 3)—				
U. S. Motor grades:				
Regular	.04¾	.05¼	.04⅜	.04⅝
Premium	.05¼	.05⅜	.04⅞	.05⅛
Third grade	.04	.04¼	.03⅝	.04
60-62 400	.04½	.04⅝	.03¾	.04
64-66 375	.04¾	.04⅞	.03⅞	.04⅛
68-70 360	.04⅜	.04⅝	.04	.04¼
Aviation fighting grade	.05⅛	.05⅜	.04¾	.05¼

*Octane Ratings—The following octane ratings apply to the three grades of U. S. Motor gasoline: Regular 60-64 octane number, premium 65 and above octane number; third grade, 50 and below octane number. Octane ratings determined by C.F.R. Motor Method.

PENNSYLVANIA (inland refineries)—				
U. S. Motor	.05½	.05⅝	.05¼	.05⅜
60-62 400	.05⅝	.05¾	.05⅜	.05½
64-66 375	.06	.06¼	.05¾	.06
68-70 350	.06¼	.06½	.06	.06¼
CALIFORNIA (domestic movement)—				
54-58 U. S. Motor	.06	.07	.06	.07
58-60 400	.07	.08	.07	.08
EAST COAST—				
U. S. Motor, below 65 octane:				
New York (Bayonne)	.0575	.06	.0575	.0615
Philadelphia	.06		.06	
Boston	.0595	.0615	.0595	.0620
Baltimore	.0575	.06	.06	
Charleston, S. C.	.06		.0575	
U. S. Motor, 65 and above:				
New York (Bayonne)	.06	.0640	.06	.0640
Philadelphia	.0625		.0625	
Boston	.0615	.0645	.0620	.0645
Baltimore, Md.	.06	.0625	.0625	
Charleston, S. C.	.0575		.06	
GULF COAST (domestic)—				
U. S. Motor, 65 octane and above	.05¼	.05½	.05⅛	.05¼
U. S. Motor, below 65 octane number	.05	.05⅛	.04¾	.04⅞

Naphthas

OKLAHOMA (Group 3)—	Sept. 5		Aug. 29	
50-52 450 (blending)	.03½	.03⅝	.03½	.03⅝
PENNSYLVANIA (inland refineries)—				
50-54 430-450 (blending)	.05	.05¼	.05	.05¼
†ARKANSAS—				
48-50 (blending)	.04	.04¼	.04	.04¼
CHICAGO (Based on Oklahoma Group 3)—				
50-52 450 (blending)	.04	.04½	.03⅝	.04
Cleaners' naphtha, 56-58 gr. 200 i.b.p.-320 e.p.	.06	.06¼	.05¾	.06
Lacquer diluent, 180 i.b.p.-250 e.p.	.07¼	.07½	.07	.07¼
Lacquer diluent, 140 i.b.p.-200 e.p.	.08¼	.08½	.08	.08¼
Rubber solvent, 68-70 gr., 100 i.b.p.-300 e.p.	.06	.06¼	.05¾	.06
Stoddard solvent, 300 i.b.p.-410 e.p., over 83° flash	.05½	.05¾	.05¼	.05½
Pet. thinner, 290-300 i.b.p.-415 e.p., over 83° flash	.05	.05¼	.04¾	.05
V.M.&P. naphtha, 56-58 gr., 190-200 i.b.p.-330 e.p.	.05¾	.06	.05½	.05¾
Petroleum spirits	.04¾	.05	.04½	.04¾

Natural Gasolines

OKLAHOMA (Group 3)—	Sept. 5		Aug. 29	
Grade 18-55	.04		.03¾	.04
Grade 26-70	.03½		.03¼	
Grade 30-70	.03⅜		.03⅛	.03¼
Low vapor pressure grades:				
15 lb. v.p. (max.)	.04⅜	.04½	.04⅛	.04¼
11 lb. v.p. (max.)	.04¾		.04½	.05
NORTH TEXAS—				
Grade 18-55	.04		.03¾	.03⅞
Grade 26-70	.03½	.03⅝	.03¼	
Grade 30-70	.03⅜	.03½	.03⅛	.03¼
Low vapor pressure grades:				
15 lb. v.p. (max.)	.04⅜		.04	.04¼
11 lb. v.p. (max.)	.04⅝	.04¾	.04½	.05
NORTH LOUISIANA—				
Grade 26-70	.03¾	.04	.03½	.03¾
CALIFORNIA—				
75-78 375	.05¼	.06¼	.05¼	.06¼

Kerosenes

(All kerosenes water white)

OKLAHOMA (Group 3)—	Sept. 5		Aug. 29	
41-43	.02½	.02¾	.02½	.02⅝
42-44	.02⅝	.02⅞	.02⅝	.02¾
NORTH TEXAS—				
40-41	.02¾	.02½	.02¾	.02½
41-43	.02½	.02⅝	.02½	.02⅝
†NORTH LOUISIANA—				
41-43	.03	.03¼	.03	.03¼
42-44	.03¼		.03¼	
†ARKANSAS—				
41-43	.03¼		.03¼	
PENNSYLVANIA (inland refineries)—				
45	.04½	.04¼	.04	.04½
46	.04¾	.04⅝	.04¼	.04½
47	.04½	.04¾	.04⅜	.04⅝
CHICAGO (Based on Oklahoma Group 3)—				
41-43	.02⅝	.02¾	.02⅝	.02¾
42-44	.02¾	.02⅞	.02¾	.02⅞
*CALIFORNIA—				
38-40 high burning test	.04	.04½	.04	.04½
NEW YORK (Bayonne, N. J.)—				
41-43	.05	.05½	.05	.05¼
GULF COAST (domestic)—				
41-43 water white	.04		.04	

*For Pacific Coast consumption.
†For Arkansas, Louisiana and Mississippi delivery.

Furnace Oils and Tractor Fuels

OKLAHOMA (Group 3)—	Sept. 5		Aug. 29	
32-36 straw	.02⅛		.02⅛	
36-38 straw	.02	.02¼	.02	.02⅛
38-40 straw	.02⅛	.02¼	.02⅛	.02¼
39-41 prime	.02¼	.02⅝	.02¼	.02⅝
NORTH TEXAS—				
38-40 straw	.02	.02⅛	.02	.02⅛
†NORTH LOUISIANA—				
36-40	.02½	.02⅝	.02½	.02⅝
†ARKANSAS—				
32-36	.02½	.02⅝	.02½	.02⅝
CHICAGO (Based on Oklahoma Group 3)—				
32-36 straw	.02½	.02¼	.02⅛	
38-40 straw	.02¼	.02⅝	.02¼	
38-40 prime white	.02⅝	.02½	.02⅝	
PENNSYLVANIA (inland refineries)—				
40-41 prime white	.03⅜	.04	.03¾	.04
NEW YORK (Bayonne, N. J.)—				
32-36	.04		.04	
36-40	.05		.05	
21 (industrial)	.03½		.03½	

Above prices are for distillate oils of zero cold test under 190° F. flash and good odor.
†For Arkansas, Louisiana and Mississippi delivery.

Gas Oil, Diesel Oil and Fuel Oil

Gas oil (G.O.) quoted per gallon basis; Diesel oil and fuel oil per barrel.

OKLAHOMA (Group 3)—	Sept. 5		Aug. 29	
32-36 (G.O.) cracking stock	.01½	.01⅝	.01½	.01⅝
U.G.I. (G.O.)	.01½		.01½	
32-36, zero to 15 (G.O.) high flash	.01¾	.01⅞	.01¾	.01⅞
28-30, zero to 10	.70	.75	.70	.75
26-30, zero to 10	.65	.70	.65	.70
24-26	.50	.55	.50	.55
20-22	.45	.50	.45	.50
Below 16	.40	.45	.40	.45
NORTH TEXAS—				
32-36 (G.O.) industrial)	.01⅝	.01½	.01⅝	.01½
22-26	.50	.55	.50	.55
Below 20	.40	.45	.40	.45
†NORTH LOUISIANA—				
32-36 (G.O.) zero	.02½		.02½	
14-16	.35	.45	.35	.45
†ARKANSAS—				
30-32 (G.O.) zero	.02½		.02½	
14-16	.35	.45	.35	.45
CHICAGO (Based on Oklahoma Group 3)—				
32-36 (G.O.) industrial	.01½	.01¾	.01½	.01¾
28-30 (zero)	.75	.85	.70	.82½
26-28 (zero)	.67½	.75	.65	.75
22-26 (zero)	.62½	.65	.60	.65
18-22 (zero)	.57½	.60	.55	.60
Below 18	.40	.45	.40	.45

Note: Fuel oils of more than 40 cold test generally 5 to 15 cents per barrel less in all areas than shown in above tables.
†For Arkansas, Louisiana and Mississippi delivery.

PENNSYLVANIA (inland refineries)—				
36-40	.03½		.03½	
CALIFORNIA—				
30-34 (G.O.) per bbl.	.85	.90	.85	.90
27 plus Diesel	.80	.90	.80	.90
15-19 bunker (at tidewater)	.50	.60	.50	.60
15-19 (cargo lots)	.45	.55	.45	.55
15-19 (tank cars)	.40	.50	.40	.50
GULF COAST—				
28-30 (G.O.)	.03	.03⅛	.03	.03⅛
28-30 Diesel	1.60		1.60	
Bunker C (bulk cargoes)	.70	.75	.70	.75
Bunker C (bunkers)	.80		.80	
NEW YORK (Bayonne, N. J.)—				
28 plus (G.O.)	.04		.04	
*28-30 Diesel	1.75		1.75	
28-30 Diesel (tank cars)	.04		.04	
‡Bunker C	.90	.95	.90	.95

*Lighterage 6½ cents per barrel.
‡Contract price at New York Harbor to ocean-going steamships only.

Petroleum Coke*

Prices per ton f.o.b. refineries in Chicago area.

	Sept. 5		Aug. 29	
Breeze (screenings)	5.25		5.25	
Still runs	6.25		6.25	
Lump and egg	7.00	7.25	7.00	7.25

*Refineries will absorb freight to 80 cents a ton.

Neutral Oils

(Viscosity at 100° F. and color)

OKLAHOMA (Group 3)—	Sept. 5		Aug. 29	
Zero to 10 Cold Test:				
150-3	.07¼	.07½	.07¼	.07½
180-3	.08½	.08¾	.08½	.08¾
180-4	.08¼	.08½	.08¼	.08½
200-3	.09	.09¼	.09	.09¼
200-4	.08¾	.09	.08¾	.09
240-3	.11	.11¼	.11	.11¼
240-4	.10¾	.11	.10¾	.11
280-3	.12	.12¼	.12	.12¼
280-4	.11½	.11¾	.11½	.11¾
300-3½	.12¾	.13	.12¾	.13
350-3½	.13¾	.14	.13¾	.14
400-4	.14¾	.15	.14¾	.15
500-4½	.15¾	.16	.15¾	.16
100-2 paraffin oil	.05¼	.05½	.05¼	.05½
15-30 Cold Test:				
200-3	.08¼	.08½	.08¼	.08¼
200-4	.08	.08¼	.08	.08¼
240-3	.10¼	.10½	.10¼	.10½
240-4	.10	.10¼	.10	.10¼
280-3	.11¼	.11½	.11¼	.11½
280-4	.11	.11¼	.11	.11¼
PENNSYLVANIA—				
150 vis., No. 3, 400-405:				
Zero pour test	.17	.17½	.17	.17½
10 pour test	.16½	.16¾	.16½	.16¾
15 pour test	.15	.15¼	.15	.15¼
25 pour test	.14¼	.14½	.14¼	.14½
180 vis., No. 3, 25 pour test	.16¾	.17	.16½	.16¾
200 vis., No. 3:				
Zero pour test	.21½	.21¾	.21½	.21¾
10 pour test	.20½	.20¾	.20½	.20½
15 pour test	.19½	.19¾	.19¼	.19½
25 pour test	.19¼	.19½	.19	.19¼
GULF COAST—				
Pale Oils:				
100-2-2½	.04½		.04½	
200-3	.05¼	.05½	.05¼	.05½
300-3	.06¼	.06½	.06¼	.06½
500-3½	.08¼	.08¾	.08½	.08¾
750-3½	.09¼	.09¾	.09¼	.09¾
1,200-3½	.10	.10½	.10	.10½
2,000-4	.11	.11¼	.11	.11¼
Red Oils:				
200-5-6	.04½		.04½	
300-5-6	.05¼	.05½	.05¼	.05½
500-5-6	.07¼	.07½	.07¼	.07½
750	.08¼	.08½	.08¼	.08½

1,200-5-6	.09	.09½	.09	.09½
2,000-6 plus	.10	.10¼	.10	.10¼
CALIFORNIA—				
Pale Oils:				
100-2½-3	.09	.09½	.09	.09½
200-2½-3	.09½	.10	.09½	.10
300-3-3½	.10½	.11	.10½	.11
350-3-4	.11	.11½	.11	.11½
400-3-4	.11½	.11¾	.11½	.11¾
450-3-4	.11¾	.12	.11¾	.12
550-3-4	.12	.12½	.12	.12½
Red Oils:				
200-4-5	.09½	.10	.09½	.10
300-5-6	.10½	.11	.10½	.11
350-5-6	.11	.11½	.11	.11½
400-5-6	.11½	.11¾	.11½	.11¾
450-5-6	.11¾	.12	.11¾	.12
500-5-6	.12	.12¼	.12	.12¼
600-5-6½	.12¼	.12½	.12¼	.12½
700-6½ plus	.12½	.12¾	.12½	.12¾
750-6½ plus	.12¾	.13	.12¾	.13
900-6½ plus	.13	.14	.13	.14

Bright and Steam Refined Stocks

OKLAHOMA (Group 3)—	Sept. 5		Aug. 29	
630 light green	.06¾	.07¾	.06¾	.07¾
600 light green S.R.	.06½	.07¼	.06¼	.07¼
600 dark green S.R.	.04¾	.05¾	.04¾	.05¾
Bright Stocks:				
190-200 D	.23½	.24½	.23½	.24½
150-160 D, 0-10	.21¾		.21¾	
150-160 D, 10-25	.21¼		.21¼	
150-160 D, 25-40	.20¾		.20¾	
150-160 E	.19¾		.19¾	
PENNSYLVANIA—				
600 S.R.	.15	.15¼	.14¾	.15
650 S.R.	.17¼	.17½	.17	.17¼
600 Pennsylvania flash	.18¼	.18½	.18	.18¼
650 D filtered	.23¼	.23½	.23	.23¼
600 E filtered	.18¾	.19	.18½	.18¾

Pennsylvania Grade bright stock:				
No. 8 color, 145-50 vis., at 210; 540-550 flash:				
10 pour test	.27½	.27¾	.27½	.27¾
15 pour test	.26	.26½	.26	.26½
25 pour test	.25	.25½	.25	.25½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—	Sept. 5		Aug. 29	
124-126 white crude scale	.03¼		.03⅛	.03¼
PENNSYLVANIA—				
122-124	.03⅜	.03½	.03⅜	.03½
124-126	.03⅜	.03⅝	.03⅜	.03⅝
NEW YORK HARBOR—				
120-122 (a.m.p. basis)	.0350		.0350	
125-127	.0375		.0375	
130-132	.0420		.0420	
133-135	.0480		.0480	
135-137	.05		.05	
Petrolatum in barrels in carload lots:				
Dark green	.02	.02⅛	.02	.02⅛
Amber	.02¼	.02⅝	.02¼	.02⅝
Extra amber	.02⅝		.02⅝	
Lily white	.06	.06¼	.06	.06¼
Snow white	.07	.07¼	.07	.07¼
Cream	.04¼	.05	.04¼	.05
CHICAGO (f.o.b. switching district)*—				
122-124	.0390	.0400	.0390	.0400
125-127	.0415	.0425	.0415	.0425
127-129	.0430	.0440	.0430	.0440
130-132	.0490	.0500	.0490	.0500
132-134	.0515	.0525	.0515	.0525

*Cents per pound on carlot orders in burlap bags of 225 lbs. approx.
Add 3° F. for a.m.p.

Export Prices

GASOLINE

GULF COAST—	Sept. 5	Aug. 29
U. S. Motor	.04¼	.04¼
60-62 400	.04⅜ .04½	.04⅜ .04½
61-63 390	.04⅜ .04½	.04⅜ .04½
64-66 375	.04½ .04¾	.04½ .04¾
LOS ANGELES, CALIF.—		
U. S. Motor, 53-55 437 e.p.	.04 .04½	.04 .04½
U. S. Motor, 65 octane	.04½ .04¾	.04½ .04¾
U. S. Motor, 67 octane	.05	.05
U. S. Motor, 69 octane	.05¼	.05¼
58-60 400 endpoint gasoline	.04½ .05	.04½ .05

KEROSENE

GULF COAST—		
41-43 prime white	.04¼	.04¼
41 water white	.04½	.046
LOS ANGELES, CALIF.—		
41-43 water white	.03¾ .04¼	.03¾ .04¼

LUBRICANTS

NEW YORK (f.a.s. in bbls.)—		
600 Warren E	.24½	.24½
600 S.R. unfiltered	.20¾	.20¾
650 S.R. unfiltered	.22½	.22½
600 flash S.R.	.24	.24
630 flash S.R.	.29	.29
Bright stock, No. 8 color	.31	.31
Bright stock, No. 6½ color dll	.30½	.30½

NEUTRALS

NEW YORK—Pale Engine Oil, Bulk (vis. at 100)—		
230-3⅞	.10¾	.10¾
180-3½	.10½	.10½
100-2¼	.06	.06
Red Engine Oil, Bulk (vis. at 100):		
300-6½	.10½	.10½
250-6	.09½	.09½
200-6	.08¾	.08¾

PARAFFIN WAX (Fully Refined)

NEW YORK (prices per pound)—				
123-125 a.m.p.	.03⅞	.04	.03⅞	.04
125-127 a.m.p.	.03⅞	.04	.03⅞	.04
130-132 a.m.p.	.0440	.0450	.0440	.0450
133-135 a.m.p.	.0495	.05	.0495	.05
135-137 a.m.p.	.05	.0520	.05	.0520

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

East Texas.....(See note)
Stratman, Kans. (Aug. 25, 1933)†..... $.72
Corsicana (heavy) (June 17, 1933)* ... .30
Other fields.....(See gravity table)

Note—In East Texas, effective August 24, 1933, Humble Oil & Refining Co., 60 cents; effective August 25, Shell Petroleum Corp., Stanolind Crude Oil Purchasing Co., Texas Co., Gulf Pipe Line Co., Tide Water Oil Co., Sinclair Prairie Oil Marketing Co., Magnolia Petroleum Co., all 60 cents; effective August 25, Sun Oil Co. and Panola Pipe Line Co., 75 cents. Effective August 26, Empire Oil & Refining Co., 60 cents. *Magnolia Petroleum Co. †Eldorado Refining Co.

West Texas

Crane, Upton, Crockett, Howard, Glasscock, Mitchell, Ector, Winkler and and Pecos Counties, and Lea County, New Mexico (See note) ..... $.40
Toborg, Pecos County (June 20, 1933)* .25
Jones and Fisher Counties..See gravity table

Note—Effective August 24, 1933, by Humble Oil & Refining Co. Effective August 25 by Texas Co., Gulf Pipe Line Co., Shell Petroleum Corp., Magnolia Petroleum Co., and by Stanolind Oil & Gas Co., in Winkler County, alone.
*Shell Petroleum Corp.

Gulf Coast

Grade A and Grade B specifications discontinued by leading buyers.....
.....(See gravity table)
Tomball (See note)* ..... $.75
Livingston (Aug. 25, 1933)† ..... .55
Greta (Aug. 25, 1933)* ..... .50
Refugio, light .....(See gravity table)
Refugio, heavy (Aug. 24)‡ ..... .55
Markham and High Island .....
.....(See Gulf Coast gravity table)
Conroe.....(See Conroe gravity table)

Note—Tomball, effective August 24, by Humble Oil & Refining Co. Effective August 25, Magnolia Petroleum Co.
*Greta posted by Texas Co. †Shell Petroleum Corp. ‡Refugio heavy, by Humble Oil & Refining Co.

South Central and Southwest Texas

(See note below table)

Darst Creek	$.50
Mirando	.50
Luling (Aug. 25, 1933)	.45
Pettus	.65
Salt Flat	.50
Lytton Springs (Aug. 26, 1933)	.55
Duval County (Aug. 25, 1933)	.50
Saxet	.55

Note—Effective on August 24 by Humble Oil & Refining Co. in Darst Creek, Mirando, Pettus, Salt Flat and Saxet. Effective August 25 in Darst Creek by Gulf Pipe Line Co., Magnolia Petroleum Co., Texas Co. Effective in Mirando, August 25 by Magnolia Petroleum Co. Effective in Pettus and Salt Flat on August 24 by Humble Oil & Refining Co., and on August 25 by Gulf Pipe Line Co. Luling and Lytton Springs, by Magnolia Petroleum Co. Duval County by Texas Co.; Saxet, effective August 24 by the Humble Oil & Refining Co., and on August 25 by Texas Co.

North Louisiana and Arkansas

Smackover, Ark. (all grades)....(See note)
Urania, La. (Aug. 26, 1933)* ..... $.45
Urania, La. (Jan. 30, 1933)† ..... .25
East El Dorado (Aug. 25, 1933) ..... .40
Other fields.....(See gravity table)

Note—Smackover: Effective August 25, 1933, Texas Co. and Magnolia Petroleum Co., 40 cents. Effective August 25, Standard of Louisiana, 35 cents; Louisiana Oil Refining Corp., 35 cents; Gulf Refining Co., 40 cents. Effective August 26, Phillips Petroleum Co., 35 cents. East El Dorado posted

(Continued on Page 31)

Crude Oil Gravity Table

Degrees in gravity—	1 Oklahoma and Kansas	2 North Texas, Central Texas and East Central Texas	3 North Louisiana and Arkansas	4 Gray County, Texas	5 Carson, Hutchinson and Moore Counties, Texas	6 Conroe, Texas	7 Salt Creek, Wyoming	8 Gulf Coast, Texas-Louisiana	9 Gulf Coast, Texas-Louisiana	10 Caddo, Louisiana	11 Sabine-DeSoto, Louisiana	12 Homer, Louisiana	13 Sarepta-Carterville, Louisiana	14 El Dorado, Arkansas	15 Haynesville, Louisiana	16 Miller County, Arkansas
Below 20	....	....	....	....	....	....	....	$.42	$.42	....	....	....	....	....	....	....
20-20.9	....	....	....	....	....	....	....	.44	.44	....	....	....	....	....	....	....
21-21.9	....	....	....	....	....	....	....	.46	.46	....	....	....	....	....	....	....
22-22.9	....	....	....	....	....	....	....	.48	.48	....	....	....	....	....	....	....
23-23.9	....	....	....	....	....	....	....	.50	.50	....	....	....	....	....	....	....
24-24.9	....	....	....	....	....	....	....	.52	.52	....	....	....	....	....	....	....
Below 25	$.40	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
25-25.9	.42	....	....	....	....	....	....	.54	.54	....	....	....	....	....	....	....
26-26.9	.44	....	....	....	....	....	....	.56	.56	....	....	....	....	....	....	....
27-27.9	.46	....	....	....	....	....	....	.58	.58	....	....	....	....	....	....	....
28-28.9	.48	....	....	....	....	....	....	.60	.60	....	....	....	....	....	....	....
Below 29	....	$.38	$.38	....	....	....	$.48	....	....	$.33	$.40	$.39	$.43	$.45	$.35	$.29
29-29.9	.50	.40	.40	....	....	....	.50	.62	.62	.35	.42	.41	.45	.47	.37	.31
30-30.9	.52	.42	.42	....	....	....	.52	.64	.64	.37	.44	.43	.47	.49	.39	.33
31-31.9	.54	.44	.44	....	....	....	.54	.66	.65	.39	.46	.45	.49	.51	.41	.35
32-32.9	.56	.46	.46	....	....	....	.56	.68	.66	.41	.48	.47	.51	.53	.43	.37
33-33.9	.58	.48	.48	....	....	....	.58	.70	.67	.43	.50	.49	.53	.55	.45	.39
34-34.9	.60	.50	.50	....	....	....	.60	.72	.68	.45	.52	.51	.55	.57	.47	.41
Below 35	....	....	....	$.44	$.39	....	....	....	....	....	....	....	....	....	....	....
35-35.9	.62	.52	.52	.46	.41	$.69	.62	.72	.69	.47	.54	.53	.57	.59	.49	.43
36-36.9	.64	.54	.54	.48	.43	.71	.64	.72	.70	.49	.56	.55	.59	.61	.51	.45
37-37.9	.66	.56	.56	.50	.45	.73	.66	.72	.71	.51	.58	.57	.61	.63	.53	.47
38-38.9	.68	.58	.58	.52	.47	.75	.68	.72	.72	.53	.60	.59	.63	.65	.55	.49
39-39.9	.70	.60	.60	.54	.49	.77	.70	.72	.73	.55	.62	.61	.65	.67	.57	.51
40 and over	.72	.62	.62	.56	.51	.79	.72	.72	.74	.57	.64	.63	.67	.69	.59	.53

Note—The Continental Oil Co., effective Tuesday, September 5, posted the following price schedule in Oklahoma and Kansas: Below 29 degrees, 58 cents; 29-29.9 degrees, 60 cents, with 2 cents added for each degree upward to 40 degrees and over, which was posted at 82 cents.

The Continental Oil Co., effective Tuesday, September 5, posted the following price schedule in North Texas: Below 29 degrees, 48 cents; 29-29.9 degrees, 50 cents, with 2 cents added for each degree upward to 40 degrees and above, which was posted at 72 cents.

The Twin State Oil Co. (Sun Oil Co.), effective August 25, posted as follows in Oklahoma: Below 29 degrees, 63 cents; 29-29.9 degrees, 65 cents, with 2 cents added for each degree upward to 40 degrees and over at 87 cents.

The Barnsdall Refineries, Inc., effective August 25, posted the following prices in Oklahoma: Below 29 degrees, 53 cents; 29-29.9 degrees, 51 cents, with 2 cents added for each degree upward to 40 degrees and over at 77 cents.

Carter Oil Co., effective September 6, raised its own prices 10 cents per barrel on all grades in Kansas and Oklahoma, making its new schedule: Below 25 degrees, 50 cents; 25-25.9 degrees, 52 cents; with 2 cents added for each degree up to 40 and over at 82 cents.

Column 1—Effective August 25 by Carter Oil Co. in Oklahoma and Kansas; Magnolia Petroleum Co. in Oklahoma; Pure Oil Co. in Oklahoma and Kansas; Rock Island Refining Co. in Oklahoma; Shell Petroleum Corp. in Oklahoma and Kansas; Gypsy Oil Co. in Oklahoma and Kansas; Sinclair Prairie Oil Marketing Co. in Oklahoma and Kansas. Effective August 25 but schedule beginning with "below 29 degrees, 48 cents," by Stanolind Crude Oil Purchasing Co. in Oklahoma and Kansas; the Texas Co. in Oklahoma; Deep Rock Oil & Refining Corp. in Oklahoma; Eason Oil Co. in Oklahoma; Gypsy Oil Co. in Oklahoma and Kansas; Johnson Oil Refining Co. in Oklahoma; Kanotex Refining Co. in Kansas; Mid-Continent Petroleum Corp. in Oklahoma; National Refining Co. in Oklahoma and Kansas; Sunflower Refining Co. in Kansas; Tide Water Oil Co. in Oklahoma and H. F. Wilcox Oil & Gas Co. in Oklahoma. Effective August 26 by Empire Pipe Line Co. in Oklahoma and Kansas; Skelly Oil Co. in Kansas and White Eagle Oil Corp. in Kansas. Effective August 25 by Anderson & Prichard, Inc., in Oklahoma and Golden Rule Refining Co. and Vickers Petroleum Co. in Kansas. Effective August 28, Bell Oil & Gas Co. in Oklahoma. Effective August 26, Philtex Oil Co. in Oklahoma and Kansas.

Column 2—Effective August 24 by Humble Oil & Refining Co. Effective August 25 by the Stanolind Crude Oil Purchasing Co., Sinclair Prairie Oil Marketing Co., the Texas Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Pure Oil Co. Effective August 26 by Bell Oil & Gas Co.

Column 3—Effective August 25, the Texas Co., Gulf Refining Co., Magnolia Petroleum Co. Stanolind Oil & Gas Co. in Pine Island district, Louisiana, and Marion County, Texas, posts below 29 degrees, 33 cents; 40 and above, 57 cents, with 2-cent differential per degree. For Standard Oil Co. of Louisiana prices see Columns 10 to 16. Louisiana Oil Refining Co. met Standard Oil Co. prices.

Column 4—Effective August 24 Humble Oil & Refining Co. Effective August 25 the Texas Co., Gulf Pipe Line Co. Sinclair Prairie Oil Marketing Co., Wilcox Oil & Gas Co., Magnolia Petroleum Co., Philtex Oil Co. Effective August 26, pays: Below 31 gravity, 38 cents, with 2 cents added for each degree upward to 40 and above at 58 cents.

Column 5—Effective August 24 by Humble Oil & Refining Co. Effective August 25 by Gulf Pipe Line Co., the Texas Co., Magnolia Petroleum Co., Wilcox Oil & Gas Co. Effective August 26 the Philtex Oil Co. posted as follows: Below 31 degrees, 28 cents, with 2 cents added for each degree upward to 40 and over at 48 cents.

Column 6—Effective August 24 by the Humble Oil & Refining Co. August 25 by the Texas Co. and the Tide Water Oil Co.

Column 7—Effective August 26, Stanolind Oil & Gas Co.

Column 8—Effective August 24, Humble Oil & Refining Co. Effective August 25, Gulf Pipe Line Co., Magnolia Petroleum Co., Sun Oil Co., Sinclair Prairie Oil Marketing Co.

Column 9—Effective August 25, the Texas Co.

Columns 10, 11, 12, 13, 14, 15, 16—Effective August 25, Standard Oil Co. of Louisiana. Met on same day by Louisiana Oil Refining Co. in Caddo, Homer, Haynesville and Cotton Valley.

(California Crude Oil Prices on Page 31)

TANK WAGON MARKETS

Quotations for gasoline and kerosene in United States, as furnished by the larger marketing concerns, include taxes

September 5, 1933

Taxes

The gasoline quotations given in the following tables include the 1½-cent Federal tax effective June 17, 1933, as well as state, county and city taxes. The gasoline quoted is the regular or standard grade. In most marketing areas a third or competitive grade is available at 1 or more cents per gallon under the service station price for the regular grade. Ethyl Gasolines are sold 2 cents above the service station price for the regular grade.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank of wagon
Atlanta, Ga.	23.0	23 0	7.5	19.0
Augusta	23.0	23.0	7.5	13.0
Macon	23.0	23.0	7.5	13.0
Savannah	23 0	23.0	7.5	14.0
Birm'ham, Ala.	25.0	25.0	8 5	13.0
Mobile	23.0	23.0	8.5	10.0
Montgomery	26.0	26.0	8.5	14.0
Jackson, Miss.	23.0	23.0	7.5	11 0
Vicksburg	21.0	21.0	7 5	11.0
Jack'ville, Fla.	23.0	23.0	8 5	12.5
Miami	23.0	23.0	8.5	13.5
Pensacola	22 0	22.0	8.5	13.5
Tampa	23.0	23.0	8.5	12.5
Lexington, Ky.	22.0	22.0	6.5	10.0
Covington	21.0	21.0	6.5	11.5
Louisville	20 0	20.0	6.5	10.0
Paducah	22.0	22 0	6.5	9.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city and county tax of 2½ cents on gasoline and one-half cent on kerosene. Kerosene prices in Georgia and Mississippi include 1-cent state tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fortieth cent on gasoline. To Pensacola, Mobile and Birmingham state taxes on gasoline add 1-cent city tax.

Southwestern District

MAGNOLIA PETROLEUM CO.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank of wagon
Dallas, Tex.	15.0	17.5	5.5	7.5
Fort Worth	15.0	17.5	5.5	7.5
Houston	15.0	17.5	5 5	8.0
El Paso	15.5	18 0	5 5	8.9
San Antonio	15.5	18.0	5.5	8.0
Texarkana	*17.5	17.5	5.5	†11.0
Muskogee	18 0	17.0	5.0	7.0
Okla. City	15 0	17 0	5.5	7.5
Tulsa	15.0	17.0	5.5	7.0
Ft. Smith, Ark.	‡18.4	18.4	5.5	†10.0
Little Rock	‡20.9	20.9	7.5	†10.9

*Less 2½ cents to dealers. †Less 2 cents to dealers. ‡Less 4½ cents to dealers.

Standard Oil Co. (Indiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank of wagon
Chicago	16.3	16.3	4.5	8 7
Decatur, Ill.	16.7	16.7	4.5	9.2
E. St. Louis	16.0	16.0	4.5	8.5
Joliet	16.7	16 7	4.5	9.2
Peoria	16.7	16.7	4 5	9.2
Quincy	14.3	14.3	4.5	9.0
Davenport, Ia.	16.6	16.6	4.5	9.1
Des Moines	15 0	16.6	4 5	8.0
Mason City	16.6	16 6	4.5	9.1
Sioux City	16.2	16.2	4.5	8.7
Duluth, Minn.	17.2	17.2	4.5	9.4
Mankato	16.3	16 3	4.5	9.3
Minneapolis	16.9	16 9	4.5	9.4
LaCrosse, Wis.	18.3	18.3	5.3	9.8
Green Bay	17.7	17.7	5.5	9.2
Milwaukee	17.3	17 3	5.5	8 7
Madison	17.4	17.4	5 5	8.9
Detroit, Mich.	16.5	16.5	4.5	9.5
Grand Rapids	16.7	16.7	4.5	9.2
Saginaw	17 0	17.0	4 5	9.5
Evansville, Ind.	17.5	17.5	5 5	9.0
Indianapolis	17.7	17.7	5.5	9.2
South Bend	18.0	18.0	5.5	9.5
Fargo, N. Dak.	18.6	18.6	4 5	11.1
Huron, S. Dak.	18.9	18 9	5.5	10.4
Sioux Falls	18.4	18.4	5.5	9.9
K. C., Mo.*	15.7	15.7	4.5	6.5
Springfield*	15.6	15.6	4.5	8.1
St. Louis	14 7	14.7	4 0	7.7
St. Joseph*	15.3	15.3	4.5	7.8
Wichita, Kans.	14.6	14.6	4.5	7.1
Bartlesville, Okla.	15.0	17.0	5.5	8 5

*State tax 2 cents, 1-cent city tax and 1-cent Federal tax.

Effective June 1, 1933—Discounts off tank wagon price to consumers on 500 gallons or more per month in territory outside of Chicago metropolitan area: 2 cents on Ethyl and Red Crown gasolines, and 1 cent on Stanolind gasoline. One-half cent additional discount in Chicago division.

Effective July 1, 1933—Discounts on resellers authorised agent's agreement made off the service station price throughout the territory as follows: 2.5 cents on Red Crown Ethyl and Standard Red Crown gasolines, and 1.5 cents on Stanolind gasoline. Half of reduction from normal service station price shall be absorbed by resellers up to maximum of 1 cent on all grades.

Stanolex Furnace Oil in Chicago

Effective July 27, 1933, prices f.o.b. Chicago, tank wagon prices: No. 1 (36-40 lt. stw. zero), under 100 gallons, 7¾ cents; No. 2 (30-34 stw. zero), 7¼ cents; No. 3 (32-26 zero), 6¾ cents; No. 4 (12-16 zero), 5¾ cents. Viscosity of No. 4, 90-115 at 100° F.; No. 5, 5½ cents; for deliveries of 100 gallons or more deduct 1 cent.

Naphtha

	Tank	
	Wagon	Car
Oleum spirits	11.9	6.23
V.M.&P. naphtha	13.9	6.73
Cleaners' naphtha	13.0	9.23
Stanisol	13.0	9.23

Tank wagon prices f.o.b. Chicago, January 6, 1933. Each of above prices subject to discount of 1 cent per gallon for 150-gallon lots if covered by contracts.

Atlantic Coast District

(Effective September 2)

STANDARD OIL CO. (NEW JERSEY)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank of wagon
Atl'tic City N.J.	18.2	17.7	4.5	9.0
Newark	17.5	17.0	4.5	8.5
Annapolis, Md.	18 8	18.3	5.5	9.9
Baltimore	18.3	17.8	5.5	8 9
Cumberland	19.8	19.3	5.5	11.7
Wash'g'n, D. C.	16.5	16.0	3.5	10.0
Danville, Va.	20.9	20.4	6.5	10 9
Norfolk	19 4	18.9	6.5	10.3
Petersburg	20.2	19.7	6.5	10.7
Richmond	19.8	19.3	6.5	10.7
Roanoke	21 0	20.5	6.5	11.0
Charls'n, W.Va.	19.2	18.7	6 5	11.6
Parkersburg	18.5	18.0	5.5	10.2
Wheeling	19.2	18.7	5 5	11.2
Charlotte, N. C.	22.6	22.1	7 5	12.5
Hickory	22.9	22.4	7.5	12.7
Mt. Airy	22.9	22.4	7.5	12.8
Raleigh	22 4	21.9	7.5	12.3
Salisbury	22 7	22.2	7.5	12.6
Charleston, S.C.	20.4	19.9	7.5	10.3
Columbia	22.2	21.7	7.5	12.2
Spartanburg	22.6	22.1	7 5	12.5

Note—Dealer contracts for gasoline are written at 2½ cents over the posted tank car price. Kerosene 1 cent off tank wagon for 25 gallons or more under contract except New Jersey and Baltimore, Md.

Central South District

STANDARD OIL CO (LOUISIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank of wagon
N. Orleans, La.	19.3	18.8	*7.8	†12 0
Baton Rouge	18.6	18.0	6.5	†11.0
Alexandria	19.4	18.9	*7.5	†11.0
Lafayette	19.6	19.1	*7 5	†11.0
Lake Charles	19 5	19.0	*7.5	†11.0
Shreveport	17.3	16.8	6.5	†11.0
Knoxville, Tenn.	22.7	22.2	8.5	12.5
Memphis	21.1	20.6	8.5	10.0
Chattanooga	22.4	21.9	8 5	10.0
Nashville	22 0	21.5	8.5	10.0
Bristol	23.1	22.1	8.5	13.0
Lt. Rock, Ark.	20.4	19.9	8 5	10.0

*Includes city tax of 1 cent. †Louisiana kerosene prices include 1-cent state tax. New Orleans kerosene price also includes 1-cent city tax.

Effective June 2, 1933, station prices fixed at 7 cents above basic tank car price at key refining points in territory. Commercial consumers for tank wagon delivery pay following amounts over tank car price basis yearly deliveries:

1,000 to 75,000 gallons	2.5
75,000 to 300,000 gallons	1 5
Over 300,000 gallons	1.0

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA*

	Gasoline			Kero.
	Tank truck†	Posted retail	Incl'ds tax	tank of wagon
Fresno, Calif.	17.5	20.0	4.5	14.0
San Francisco	17.0	19 5	4.5	12.5
Los Angeles	16 0	18.5	4.5	12.5
Reno, Nev.	20.5	23 0	5.5	15.5
Portland, Ore.	20.0	22.5	5.5	13.5
Seattle, Wash.	20.0	22.5	6 5	13.5
Tacoma	20.0	22.5	6.5	13.5
Spokane	22 0	25.5	6.5	18 0
Phoenix, Ariz.	17.5	20.0	6.5	‡16.0

*Retail prices posted by Standard Stations, Inc., a subsidiary.

†Above prices are at company's plant or depots as company does not operate stations. A 4-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent. ‡Includes 5-cent state tax.

New York and Part of New England District

STANDARD OIL CO (NEW YORK)*

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank of wagon
Albany, N. Y.	17.7	18.7	4.5	9.0
New York	17.2	18.2	4.5	8.0
Buffalo	17.9	18.9	4.5	9.0
Rochester	18.0	19.0	4.5	9.0
Syracuse	18.0	19.0	4.5	9.5
Boston, Mass.	17.2	18.2	4.5	8.0
Augusta, Me.	18.7	19.7	5.5	9.0
Manch'tr, N. H.	19.4	20.4	8.5	8.0
Burlington, Vt.	20.0	21.0	5.5	8.5

*All service station prices subject to 2-cent discount for cash.

Pennsylvania-Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank of wagon
Pittsburgh, Pa.	16.5	17.5	4.5	9.0
Philadelphia	16.5	17.0	4.5	9.0
Scranton	16.5	17.5	4 5	9.0
Allentown	16.5	17.5	4.5	9.0
Altoona	16.5	17.5	4.5	9.0
Erie	16.5	17.5	4.5	9 0
Dover, Del.	16.5	17.5	4.5	9.0
Wilmington	16.5	17.5	4.5	9.0
Springf'd, Mass.	18.1	19.1	4.5	8 9
Worcester	18.0	19.0	4.5	8.0
Boston	17 5	18.5	4.5	8.0
Providence, R.I.	16.5	17.5	3.5	8.0
Hartford, Conn.	16 9	17.9	3.5	8.0
New Haven	16.7	17.7	3.5	8.0

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank of wagon
Denver, Colo.	18 0	20.0	5.5	11.5
Pueblo	18.0	20.0	5.5	13.0
Grand Jnctn.	20.0	22.0	5.5	13.0
Casper, Wyo.	19.0	21.0	5.5	19.5
Cheyenne	17.0	19.0	5.5	12.0
Butte, Mont.	22 5	24.5	5 5	17.5
Billings	22.0	24.0	6.5	16.0
Great Falls	24.0	26.0	6.5	17.5
Helena	24.0	26.0	6.5	17.5
Salt Lake, Utah	21.0	23 0	5.5	16.0
Albu'que, N. M.	19.5	22.0	*7.5	12.0
Boise, Idaho	24.0	26.0	6.5	18.0
Twin Falls	24.0	26.0	6.5	18.0

*One-cent city tax.

Effective June 1, 1933, dealers and lease and license accounts will receive 2½ cents discount on regular gasoline in Montana, Colorado, Wyoming, Utah and Idaho.

Ohio

STANDARD OIL CO. (OHIO)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank of wagon
Ohio points	17.0	18 0	5.5	*12.5

*Includes state tax of 1 cent, effective July 22.

Canada*

IMPERIAL OIL, LTD.

Imperial 3-Star Gasoline

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank of wagon
Hamilton, Ont.†	25.5	26.5	6.0	16.5
Toronto, Ont.†	25.5	26.5	6 0	16.5
Brandon, Man.*	30.0	33.5	7.0	21.5
Winnipeg, Man.	27.0	30.5	7.0	18.5
Regina, Sask.	30.0	24 0	6.0	22.5
Saskatoon, Sask.	32.0	36 0	6.0	24.5
Edmonton, Alta.	30 5	34.5	6.0	23.5
Calgary, Alta.	27.0	31.0	6.0	20.0
Vanc'ver, B. C.†	29.0	29.5	6.0	23.0
Montreal, Que.	23.0	26.0	6 0	16.0
St. Johns, N. B.	25.5	29.5	7.0	21.5
Halifax, N. S.	24.5	28.5	6.0	21.5

*Imperial gallon used in Canada. †Dealer discount posted tank wagon on gasoline in Ontario and British Columbia subject to dealer's discount of 2 cents per gallon.

Nebraska

STANDARD OIL CO. (NEBRASKA)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank of wagon
Omaha	17.3	18.3	5.5	9.8
McCook	16.0	16.0	5.5	9.0
Norfolk	17 8	18.8	6.5	10 3
N. Platte	16.8	19.8	5.5	11.0
Scottsbluff	16.3	16.3	5.5	10.0

Note: Discount to dealers and AAA commissions. From service station price: Red Crown Ethyl and Standard Red Crown Gasoline, 2½ cents. Reliance (third brand) gasoline, 1½ cents. Rentals under lease and agents agreement, one-half cent per gallon additional.

Discount to consumers under contracts (large consumers under contracts and governmental units): On tank wagon deliveries of gasoline on monthly purchases of 500 gallons, or yearly purchases of 6,000 gallons, from the service station price: Red Crown Ethyl and Standard Red Crown Gasoline, 2 cents per gallon; Reliance (third brand) gasoline, 1 cent per gallon.

TANK WAGON CHANGES

Standard Oil Co. (Kentucky) July 28 advanced gasoline tank wagon and service station prices 2 cents in Macon, Ga. August 15 it advanced gasoline prices 2 cents in Pensacola, Fla. August 21 it advanced the price of kerosene 2 cents in Augusta, Ga., August 28 it advanced the gasoline tank wagon and service station prices 1 cent throughout its territory.

The Atlantic Refining Co. August 23 advanced gasoline tank wagon and service station prices one-half cent in Massachusetts and three-tenths cent in Connecticut and Rhode Island. August 26 it advanced gasoline prices one-half cent in Pennsylvania and Delaware.

Imperial Oil, Ltd., August 26 advanced gasoline tank wagon and service station prices one-half cent at all points in Canada with the exception of the Province of British Columbia.

Continental Oil Co. August 30 advanced gasoline tank wagon and service station prices 1 cent throughout Colorado, Wyoming, Utah, Montana and southern Idaho.

Magnolia Petroleum Co. July 26 advanced gasoline tank wagon and service station prices one-half cent in Fort Smith and Little Rock, Ark.

Standard Oil Co. of New Jersey August 26 advanced gasoline tank wagon and service station prices one-half cent throughout its territory. September 2 it eliminated the 2-cent cash discount off posted credit service station prices and established new service station prices 1½ cent below the former posted credit service station prices, equivalent to increasing the cash prices at service stations one-half cent. August 26 it reduced the tank wagon price of kerosene 2½ cents in Atlantic City, N. J., and seven-tenths cent in Petersburg, Va. On the same date it increased the kerosene price 1 cent in Danville, Va.

Standard Oil Co. of Louisiana August 26 advanced gasoline tank wagon and service station prices one-half cent throughout its territory. September 2 it adopted the same price adjustment as that of the Standard Oil Co. of New Jersey explained in the preceding paragraph. On August 26 it advanced the gasoline tank wagon price of kerosene 1 cent in New Orleans, Baton Rouge, Lafayette and Lake Charles, La., and 2½ cents in Alexandria, La.

Standard Oil Co. of Ohio September 2 discontinued its 2-cent service station discount for cash and all contracts for commercial discounts at service stations.

Standard Oil Co. of Nebraska August 26 advanced gasoline tank wagon and service station prices one-half cent in Omaha, Norfolk, North Platte and Scottsbluff.

OIL IN CENTRAL ASIA

The Central Asiatic republics contain one of the enormous oil reservoirs of Soviet Russia, according to Russian official publications. In Turkmenistan, the Cheleken, Chikishliar, Keemir, and Neftedag Fields are now being exploited; in the last, gushers are of regular occurrence, and huge quantities of oil have been lost because of the absence of storage facilities. In Uzbekistan, the Fergana Valley district has been found to contain over 40 geological structures favorable to the finding of oil, and the territory already proved is three times that of all North Caucausus. There is no doubt in the minds of the scientists who have investigated this matter, the Russians say, that there are huge stores of petroleum in Central Asia, sufficient to supply the rapidly growing demand of that section, and also to add to the volume of export oil produced in Russia.

NEWS FOR SALES DEPARTMENTS

Farm Use of Petroleum Is Over Two Billion Gallons

More than 2,125,000,000 gallons of petroleum fuels, including gasoline, kerosene and distillate, together with approximately 90,700,000 gallons of lubricating oils, were used on farms in the United States in 1930, according to the Department of Agriculture. More than half of the fuel and lubricating oil, 1,240,500,000 and 46,500,000 gallons, respectively, was used in automobiles. It was estimated that automobiles consumed 1 quart of oil per 100 miles and trucks 1 quart of oil for each 50 miles. Other power units were estimated as consuming 1 gallon of oil for each 20 gallons of fuel.

Gas tractors used 526,500,000 gallons of fuel and 26,300,000 gallons of lubricants. Trucks consumed 225,000,000 gallons of fuel and 11,250,000 gallons of oil. Stationary gas engines used 90,000,000 and 4,500,000 gallons, respectively. Harvester threshers used 21,188,000 gallons of fuel and 1,059,000 gallons of oil, electric light plants 21,627,000 and 1,081,000 gallons, respectively.

The estimated mileage and fuel for trucks was 2,500 miles each, with fuel consumption of 1 gallon for each 10 miles, and for automobiles 4,500 miles each, with fuel consumption of 1 gallon for each 15 miles.

In 1930 there were approximately 4,135,000 automobiles, 900,000 trucks, 920,000 gas tractors, 1,131,000 stationary gas engines, 61,000 harvester threshers, and 270,000 electric light plants on farms in the United States.

NAVY ASKS FOR OIL BIDS

NEW YORK, Sept. 4.—The Bureau of Supplies and Accounts, Navy Department, Washington, D. C., will open bids September 15 on Schedule 613 for miscellaneous quantities of motor gasoline and motor fuel for East Coast deliveries.

The Quartermaster Supply Officer, Army Base, Brooklyn, N. Y., will open bids September 12 on Circular 52 for quantities of fuel oil and gasoline for various deliveries.

Deep Rock Oil Corp. has received a contract from the Army Air Corps, Wright Field, Ohio, for 32,000 gallons of motor gasoline at 5.48 cents per gallon, f.o.b. Cushing, Okla.

GOLF AND BANQUET ANNOUNCED

Announcements have been sent from the office of the secretary of the Oil Trades Association of New York naming the dates of the annual golf tournament and the annual banquet. The golf tournament is to be held Thursday, September 21, on the links of the Pelham Country Club, Pelham Manor, N. Y. The banquet will be held on the evening of Thursday, October 26, at the Waldorf-Astoria, New York.

LOWER FEES INCREASE SALES

HARRISBURG, Pa., Sept. 5.—Half-rate license fees for automobiles are drawing twice as many passenger cars from the garage as were in use last year, with corresponding increase in business for dealers in gasoline. During the first 15 days in August of this year, 60,408 automobiles were registered under the half-fee rate which became effective August 1. Last year the total number of cars for the period was 31,398. Two years ago it was 35,987. Commercial vehicle registrations, less sensitive as an economic barometer, totaled 8,619 this year, 7,592 last year and 5,918 in 1931. The increase over last year was 13.5 per cent, but 45.6 per cent over 1931.

Protest the Use of Foreign Asphalts for NRA Highway Improvement Program

The Anderson-Prichard Oil Corp. has filed a protest with the U. S. Department of Public Roads against the use of foreign asphalt on the roads to be built and improved under the NRA program of highway construction. The protest probably expresses the views of refiners in general who operate asphalt manufacturing facilities at their refineries in the Mid-Continent area because it becomes readily apparent that there is adequate capacity to supply a much larger consumption of road oils and asphalts than now being realized and there is no unusual quality in the foreign asphalts and road oils that can not be met by the products manufactured in this country. A similar appeal for the use of domestic asphalts and road oils was placed in the hands of the Oklahoma Highway Commission for that State has a rather complete program of highway improvement over the immediate future.

In the data provided it was shown that 18 plants are located in the Mid-Continent area which manufacture asphaltic materials and that there is all ready three times as much manufacturing capacity locally as is needed to supply local needs. Further comments include the following:

"Briefly the crude oil production and present refining facilities in Kansas, Missouri, Oklahoma and Texas can supply their own requirements, in addition to those of Minnesota, Nebraska, Iowa, Wisconsin and New Mexico in so far as highway needs are concerned, and have left 71 per cent of their asphaltic residues. It must be obvious that there is no need for the importation of foreign asphalts or asphaltic oils to this territory.

"The producers of this section have had to compete with foreign produced asphalts for many years, and the prejudice against domestic asphalts has permitted the foreign asphalts (even on identical specifications) to command a higher price. To permit foreign asphalts under the NRA will amount to governmental sanction of past practice of giving a preference to foreign asphalts.

"Since it is obvious that there is no shortage of domestic asphalt in this section of the country, there can be only one reason for the admission of foreign asphalts; i.e., that domestic asphalts are not suitable for the work proposed. We contend that there is no evidence to indicate any superiority for the foreign material.

"Any argument for the admission of foreign asphalts under the NRA can apply to many other materials used in highway construction. The purposes of the NRA are clearly national and not international. Producers of domestic asphalts cannot increase wages and compete with producers of foreign countries where wages are far below American standard.

"We point out that the market for road oils and asphalts have been greatly restricted in this section on past Federal aid highway work. In the State of Oklahoma, out of $33,000,000 of Federal money spent for highways no petroleum oils or asphalts produced in this State have been used. The loss of 115 miles of proposed bituminous work in the 1932 Federal aid program of Oklahoma is keenly felt by the Oklahoma refiners, both in the loss of the business and the adverse advertising the oil asphalt road has received, resulting in practically no road oil sales in the entire State during 1933.

"The importation of foreign asphalts will automatically reduce the available market for domestic asphalts. This will result in more domestic asphaltic residues being converted into fuel oil—largely for industrial purposes, which in turn reduces the consumption of coal and means less work for the American miner. The money spent for foreign asphalts loses its purchasing power in this country. Money spent for domestic asphalt goes back in the channels of trade. Domestic asphalts used on highways is taken off the fuel market and gives producers of fuel an outlet for their products.

"When it has been actually proven that a state highway department cannot obtain domestic asphalts suitable for its needs and at a price comparable with other domestic materials, we feel that in such event the admission of foreign asphalts under the NRA program would be justifiable as it would also be under like conditions for other materials, such as steel, cement and lumber. Until such a condition develops, we see no occasion to make a special exemption for foreign asphalts."

OIL MARKETERS TO ORGANIZE

The organization meeting of the National Oil Marketers Association will be held at the Palmer House, Chicago, on Thursday, October 5, to adopt by-laws, elect officers, and lay plans for the future activities of the association. Oil jobbers and executives of state and local associations are invited. A session will be devoted to the marketing provisions of the petroleum code. The code will have been in effect a month at that time and discussion of its workings are expected to prove beneficial.

TO MEET IN PHILADELPHIA

The board of directors of the American Oil Burner Association, meeting in Washington on August 23, voted to hold the eleventh national oil burner show and convention in Philadelphia. The dates for the 1934 show and convention will be announced later.

SEEK TAX EQUALIZATION

WASHINGTON, D. C., Sept. 4.—A unique effort to equalize gasoline prices on the border line of Virginia and the District of Columbia is proposed by the General Assembly of the Old Dominion, which has requested President Roosevelt to modify the oil code to permit oil companies to only pay part of the gasoline tax in order to preserve a parity among retailers along the state border.

The resolution referred to the border where companies have been paying 2 cents of the 3 cents difference between the 5-cent Virginia tax and the 2-cent levy in the District of Columbia.—C. E. K.

PUMPHREY WITH EL DORADO

O. T. Pumphrey, formerly with the Skelly Oil Co., Tulsa, has been appointed northwestern sales manager of the El Dorado Refining Co., with headquarters at Minneapolis.

Use of Kerosene as Motor Fuel Increases in Sweden

The use of kerosene in place of gasoline as a motor fuel is steadily increasing in Sweden. Vice Consul E. P. Maffitt, in a report made public by the Department of Commerce, points out that behind this increase lies the fact that gasoline is heavily taxed, while there is no tax on kerosene.

Under the present system the expense of construction, improvement, and maintenance of roads is met chiefly by the tax on motor vehicles, of which about 60 per cent is obtained from gasoline.

Because of the present trend it has been suggested in Sweden that the use of kerosene as a motor fuel be restricted, or that it bear a tax to provide an amount sufficient to make up for the loss occasioned by the decreased use of gasoline.

It is probable, however, the report says, that no action will be taken on the matter before the next sitting of the Swedish parliament, scheduled for January 10, 1934.

GROWING AS OIL IMPORTER

NEW YORK, Sept. 5.—Construction of two new refineries at Montreal during the past year has brought about an appreciable increase in oil imports at that port.

Between the opening of navigation in the St. Lawrence this season and July 31 a total of 828,359 tons of fuel and refined oil were imported at Montreal by tankers arriving from the Gulf of Mexico, the Dutch West Indies, Trinidad and Peru, this being an increase of 121,316 tons over the quantity imported during the comparable period last year.

Gasoline imports for the season show a drop from last year of some 19,000 tons, totaling this season 61,609 tons, compared with 80,260 tons during the corresponding period last year. This decline is attributed to the growing gasoline capacity of Montreal refineries.

Fuel oil imports up to the end of July amounted to 810,906 tons, as compared with 707,043 tons in the corresponding period of last season.

Leading importers at Montreal include Imperial Oil, Ltd., British-American Oil Co., Ltd., McColl-Frontenac Oil Co., Ltd., Shell Co. of Canada, Ltd., LaSalle Petroleum Refinery, Ltd., and the Sun Oil Co., Ltd.

ADD LUBRICATING FACILITIES

HOUSTON, Tex., Sept. 5.—Magnolia Petroleum Co. has just let a contract to Max B. Miller Co. of New York for the installation of a new lubricating plant unit at its Beaumont refinery. The construction, which will be on a turnkey basis, will include two large pipe stills, two towers and accessory equipment.

ORGANIZE COMPANY

RICHMOND, Va., Sept. 4.—The Marathon Oil Co., Inc., of Petersburg, Va., with maximum capital of $25,000, has been granted a charter by the State Corporation Commission to engage in the oil and gasoline business. C. C. Wilson of Petersburg is president of the company.

INCREASE SUNFLOWER PLANT

HUTCHINSON, Kans., Sept. 5.—The local refinery operated by the Sunflower Refining Co. will be modernized and its capacity will be increased 2,000 bbls. daily to bring the total to 4,000 bbls. This announcement was made by C. L. Brown of Abilene, president.

Retail Gasoline Prices Advanced 1 Cent in East as Marketers Discontinue Cash Discounts

By A. E. MOCKLER
New York Bureau, The Oil and Gas Journal

NEW YORK, Sept. 4.—An advance of one-half cent per gallon in tank wagon gasoline and 1 cent per gallon in the service station price for motor fuel was the outstanding feature of the East Coast market last week, as the oil industry in this area cleared its decks for action under the provisions of its NRA code. Coincidentally with the price advances, marketers announced the elimination of the cash discount of 2 cents per gallon recently put into effect and established a flat differential of 2 cents per gallon between regular and third grade gasolines.

While Atlantic Refining Co. was the first company to announce the discontinuance of the cash discount, Standard Oil Co. of New York, Inc., marketing subsidiary of Socony-Vacuum Corp., initiated the price advance and likewise pioneered in giving retailers a wider profit margin to enable them to offset their higher operating costs due to code requirements. In a statement outlining these steps, Socony said:

"Effective September 2, Standard Oil Co. of New York, Inc., will advance throughout New York and New England its posted dealer tank wagon prices one-half cent, and its service station price 1 cent. This will enable the dealer to make an additional one-half cent profit to take care of additional expense incurred in operating under the NRA petroleum code, which becomes effective September 2. The price on third grade gasoline will be 2 cents below the posted price for Socony gasoline. In accordance with the provisions of the code, all cash discounts at service stations will be withdrawn and there will be only one posted service station price for each product."

Following this action by Socony, other major marketing companies operating in the East Coast area announced that they would take similar steps, both with respect to the price advance and the elimination of the discount for cash at service stations. The current revision brings the retail price for regular quality gasoline in New York City up to 17½ cents per gallon, almost 50 per cent over the quotations in effect earlier in the year when during a gallonage war featured brands of gasoline were retailing at 8 gallons for $1, including state and Federal taxes.

Refinery Gasoline

The market tone for both regular and low grade motor fuels is decidedly bullish, and increases of from one-half to 1 cent per gallon in the immediate future are being predicted in some quarters of the market. The revisions announced in tank wagon and service station markets during the week have widened the spread between refinery and retail quotations by an additional 1 cent per gallon, and early action in the tank car market to take up this slack is looked for. With the Gulf cargo market strengthening, advances here will soon become mandatory under the pricing arrangements of the major companies.

The present basis of posted tank car prices in eastern markets shows a considerable spread, representing the divergent views of leading refiners as to a fair market level, based on the Gulf cargo price. At New York, gasoline of 65 octane number and above is posted all the way from 6 to 6.40 cents per gallon, with the unbranded grade held at 5¾ to 6.15 cents per gallon. At Philadelphia, refiners quote the market for the higher grades of motor fuel at 6¼ cents, with the unbranded grade posted at 6 cents, while at Boston the range is 6.15 to 6.45 for the regular grades and 5.95 to 6.20 cents per gallon for the unbranded product. At Baltimore, sellers in the tank car market post high test gasoline at 6 to 6¼ cents, with the lower grade product at 5¾ cents, while the Charleston, S. C., market is held at 6 cents for the highest and 5¾ cents per gallon for gasoline under 65 octane number.

There has been an exceptionally heavy movement of gasoline in the tank car market during the past week, distributors filling their storage in anticipation of drastically higher prices. Many jobbers not only filled all available storage at their plants, but kept additional tank cars rolling in order to fill in storage withdrawals as rapidly as they were made. The triple holiday over the Labor Day week-end aided in stimulating the movement to a considerable extent.

Tank Wagon Gasoline

Volume was holding up extremely well during the past week, under the influence of a decided change for the better in weather conditions, stimulated by the heavy demands for the week-end holiday trade. Increases of 1 cent per gallon in net service station prices became effective on September 2. The elimination of the cash discount has caused relatively little comment in trade circles, in that this discount has not meant anything to the bulk of the motoring public, and has been regarded generally as a tax applied to credit sales.

The current price revision has accomplished one result that has aroused widespread approval in marketing circles, in that for the first time on record officially a flat differential of 2 cents per gallon has been established between third grades and regular gasolines. Thus, instead of being purely a competitive "football," with its price dictated solely by competitive conditions locally, third grades now take their place as an accepted factor in the marketing scheme.

Kerosene

Kerosene markets are showing an upward tendency, and 41-43 wattr white is now quoted locally at a range of 5 to 5½ cents per gallon, f.o.b. refineries, in the New York Harbor district, as against the previously prevailing range of 5 to 5¼ cents. Demand for kerosene in the tank car market showed considerable improvement during the period under review, and the trade is expecting an advance of one-half to 1 cent per gallon in the refinery basis shortly.

Tank wagon kerosene markets have likewise taken on more activity with the approach of the fall season, and with producing costs and consumption both on the increase, it is expected that the major distributors in East Coast territory will shortly announce an increase in their retail price levels.

Furnace Oil

Confronted with rising refinery market prices for domestic heating oils, distributors who have booked many contracts for delivery during the 1933-34 heating season at last season's price levels or under are now rushing in to make contracts covering cargo and tank car deliveries to cover the bulk of their retail commitments.

Whether marketers will be able to pass on to consumers price advances due directly to NRA operation is still an open question. However, most of the retail contracts guarantee the consumer against price advance for the life of the contract, while at the same time protecting the buyer in the event of a reduction in posted prices.

Refinery prices for furnace oil were unchanged here during the week, but refiners were discussing the likelihood of an early advance.

Fuel Oil

The recent 10 cents per barrel advance in the price of bunker C fuel oil at Atlantic and Gulf Coast ports will be followed by a similar increase in the near future, it is reported in local trade circles. The present posted basis is 95 cents per barrel at principal ports on the Atlantic seaboard, with sellers in New York harbor still allowing a concession of 5 cents per barrel to contract buyers operating ocean-going steamships.

The Gulf cargo market for fuel oil strengthened materially during the past week, with sellers quoting a minimum of 85 cents per barrel at the close of the period. It was understood that relatively little oil was to be had in the cargo market, and sellers were talking further advances in quotations.

Diesel Oil

While the tone of the Diesel oil market has strengthened, in sympathy with firmness in the entire products situation, no price increase has as yet developed in this branch of the market, and an immediate upturn in quotations is regarded as unlikely.

Refiners here post $1.75 per barrel in bulk, f.o.b. terminals, and $1.81½ per barrel barged alongside within the harbor limits. A moderately active demand for prompt shipment Diesel oil ruled throughout the week.

For shore deliveries, refiners still quote 4 cents per gallon for 26-30 gravity oil in tank cars, f.o.b. refineries.

Gas Oil

Demand was seasonably slow last week, but the market held steady at 4 cents per gallon for 28 gravity minimum oil in tank car lots, f.o.b. refineries.

On the termination of existing contracts, it is indicated, the market will

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Exports and Imports of Refined Products; Receipts of California Oil in the East

NEW YORK, Sept. 4.—Export trading in crude and refined oils was again practically at a standstill during the past week, pending further developments in the code situation. The price situation is expected to be adjusted this week, and it is believed that considerable business which has been pending during the past fortnight will either be placed for shipment out of the Gulf or definitely diverted to other countries, in the event that the prices to be set for United States oil are entirely out of line with the world oil parity.

Foreign oil marketers who have hitherto drawn a large part of their requirements through the purchase of bulk cargoes at the United States Gulf are watching the code situation in this country with considerable trepidation, as is likewise the case with their buying representatives in this country, and the fear is expressed that oil prices, under code operation, may advance to the point where these foreign distributors will no longer be able to cover their requirements by buying United States oil. With crude business thus diverted to Mexico and South America, and refined oil cargoes to the Caribbean area, Constanza, and Soviet exporting ports, American export oil operators may be definitely shelved, for the duration of the NRA at least.

Petroleum Exports

The following table shows exports of principal refined petroleum products reported from the port of New York during the three weeks ended August 26 (all figures in gallons unless otherwise noted):

	Week ended		
	Aug. 26	Aug. 19	Aug. 12
Gasoline	112,000	27,000	4,000
Naphtha	240,000	132,000	
Kerosene	13,000	36,000	2,000
Fuel and gas oil	5,000	810,000	
Lub oil	1,016,000	873,000	1,035,000
Pat., refined	466,000	53,000	36,000
Petrolatum		150,000	
Paraffin wax	685,000	880,000	2,311,000
Refined		70,000	
Scale	100,000	90,000	97,000
Lub grease	535,000	1,276,000	591,000

(Pounds)

Imports

Imports of crude and refined petroleum at the principal United States ports for the week ended August 26 totaled 1,081,000 bbls., a daily average of 154,429 bbls., compared with 866,000 bbls., a daily average of 123,714 bbls. for the previous week, and a daily average of 155,214 bbls. for the four weeks ended August 26. Details follow:

(Barrels of 42 gallons)

At Atlantic Coast Ports—	Bbls.
Baltimore	214,000
New York	570,000
Philadelphia	297,000
Total	1,081,000
Daily average	154,429

The week's receipts consisted of 795,000 bbls. of crude and 286,000 bbls. of fuel oil.

In view of the steadily strengthening domestic market for fuel oil, it is expected that importing companies will increase their shipping schedules for this product, although movement will be curtailed to some extent due to the expected limitation of import movement under the operation of the industry's NRA code.

California Oil Receipts

Receipts of California petroleum at Atlantic Coast ports during the week ended August 26 (there were no receipts of California oil at Gulf ports during the period) totaled 170,000 bbls., a daily average of 24,286 bbls., compared with 510,000 bbls., a daily average of 72,857 bbls. during the previous week, and a daily average of 33,821 bbls. for the four weeks ended August 26. All of the week' receipts were of gasoline, 97,000 bbls. being landed at New York and 73,000 bbls. at other North Atlantic ports.

Chicago Area Refinery Market Firm as Routine Operations Are Adjusted to Meet Code

By R. C. CONINE
Chicago Bureau, The Oil and Gas Journal

CHICAGO, Sept. 4.—With marketing practices under regulations in accordance with interpretations of the NRA code for the petroleum industry, it is indicated today in Chicago district oil trade circles that sentiment is such that a few weeks of operation will clear up a number of points of variance within the marketing branch of the business, although at this time vigorous opposition is threatened in certain quarters. Some of the provisions of the code, it is said, will probably prove impractical, as, for instance, the posting of all prices on all types of deliveries by refiners. Some refiners are anxious to know if their books must be opened for inspection of transactions antedating the signing of the code by President Roosevelt. "If the code means that refiners must tell what they have been doing during the past few years," one major refiner said, "a great deal of bad feeling is going to be aroused. What will X refinery say when they discover that they have been charged more for materials than Y refinery? And what about those contracts that were square as a die on their face, but were accompanied by a letter giving additional discounts, etc.?"

Discounts Eliminated

The old trouble maker, special discounts at the service station, has been eliminated, theoretically. Although discounts to commercial accounts under contract are permitted at the service station, as signed by the President, a considerable number of the marketers are opposed to this exception and will do all in their power to have all discounts of any description banned.

Contracts Drop Protection

Contracts now being signed up for distillates and fuel oils to distributors and jobbers show that several of the major sellers have eliminated "protection" and are basing prices strictly on the average of published quotations on date of delivery, or on certain day of week of delivery. Some of the larger refiners are doing business with long-contracted accounts which feature tank wagon business on a sliding scale margin basis with the margin maximum set at a point less than a cent above the minimum normal margin. Below this minimum the margin, which is governed by the tank wagon price, is split, i.e., if the normal drop in the tank wagon would call for a quarter of a cent drop in the margin to the distributor, then subnormal declines in the tank wagon would call for drops of only an eighth of a cent below the normal minimum margin.

In connection with fuel oil contracts to tank car buyers, observors in Chicago district believe that the old method of basing prices on a certain percentage of the price of crude oil will go by the board. Sellers interviewed appear reluctant to make any agreement which does not take into account the ruling markets on the date of delivery. A considerable part of this hesitancy is due, no doubt, to the feeling that the code as it now stands must undergo considerable revision during the life of the usual contracts which might be signed now. The fact that they do not know what form the code will take a month or three months from now naturally prevents them from taking business which if not canceled outright might cost them heavily. In the matter of tank car gasoline contracts it appears that some refiners are willing to take chances. Contracts have been signed up recently on the basis of a 5-cent marginal guarantee with top open and split below.

Post Office and Benzoline

The successful bidders and the prices on the post office and the Benzoline Motor Fuel Co. (which supplies the taxis) is always of interest in Chicago district oil circles, particularly the latter, which is always shrouded in secrecy. The Benzoline business usually amounts to between 100 and 125 tank cars of gasoline per month. This month, however, the purchase was for 200 cars and the price was 3¼ cents a gallon, Group 3, for low octane material. The bids announced by the Chicago post office cover about 250,000 gallons of regular grade U. S. Motor gasoline for the last quarter of 1933. In this business Standard Oil Co. (Indiana) appears to be the successful bidder. Quotations were as follows: Bidders' bulk plant proposals, Standard of Indiana, one-eighth of a cent below average tank car price, with maximum of 4.03 cents per gallon, plus 1.871 cents handling charge; Jewett & Sowers Oil Co., one-eighth of a cent below average tank car price with 5-cent maximum and 4.40 cents handling charge. Tank car proposal: Deep Rock Oil Corp., bid average tank car with maximum of 8 cents a gallon and half a cent handling charge.

Reports From East Texas

Reports reaching Chicago district refiners and marketers from East and North Central Texas indicate that independent refiners are very much in opposition to present price-fixing provisions in the code. At the close of the week about 40 of these refiners were announcing that they would be forced to close down their plants immediately because they would have to pay more for their crude oil than they would realize on the products.

Markets Unusually Strong

Offices were closed today, Labor Day, but at the close of business Saturday refiners and marketers had advanced their quotations on gasolines three-eighths of a cent, while naphtha sellers who had not withdrawn from the open markets raised their prices a quarter of a cent. In Washington, according to reports reaching here, the members of the planning and co-ordination committee referred the matter of prices to the President, with a suggestion, it is understood, from a majority that the prices be fixed from the well to the supply tank on the automobile, and that other products be not ignored in the matter of price. These developments have given rise to widespread expectation that service station and tank wagon gasoline prices will be advanced from 1 to 3 cents a gallon over the nation. In some of the reports, supposedly from authoritative sources, it is said that the margins allowed to dealers will be increased to offset additional expenses arising from observation of the code.

All Quotations Group 3 Basis

All refiners, large and small, operating in Chicago area are changing their price structures to conform with the Group 3 basis. It has been the practice here to quote f.o.b. refinery, particularly on such materials as special naphthas, distillates and fuel oils. Whether or not these changes will call for elimination of the "Chicago switching district rate" commonly used on fuel oils is not known at this time, but it appears that this rate would be barred.

Prices quoted at this writing do not appear to take full advantage of the better sentiment, but it is said by the various marketers that further advances are due at the opening of business Tues-

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DO YOU REMEMBER?

From The Oil and Gas Journal Files

25 Years Ago

September 6, 1908

B. G. Dawes, who operates the Caddo, Louisiana, oil field, is a visitor in Beaumont, Tex. Mr. Dawes is interested in the Dawes Syndicate which owns the Beaumont gas plant.

The Gulf Coast fields of Texas and Louisiana are producing 50,000 bbls. a day. The pools are Saratoga, Batson, Humble, Sour Lake, Spindletop, Dayton, Markham and Goose Creek, in Texas, and Jennings, Caddo, Welsh and Anse La Bute, in Louisiana. Jennings with 14,000 bbls. per day is the biggest pool.

The big well of the Pennsylvania Oil Co., in the Tampico, Mexico, Field, which has been burning since July 4, has been extinguished and is producing 25,000 bbls. of oil per day. Six giant centrifugal pumps poured gravel and mud into the mouth of the burning well for 10 days and this, together with persistent dynamite blasting, extinguished the flame.

20 Years Ago

September 11, 1913

A big market for natural gas from the Cushing Field, in Oklahoma, has been found. The Quapaw-Wichita Gas Co. will lay a 12, 15 and 18-inch line from the field to its compressor station at Bigheart, Osage County, Oklahoma. The company supplies Missouri and Kansas cities with gas. Booth & Flynn Contracting Co., of Pittsburgh, Pa., will finance the project.

The Gulf Refining Co. advises that its retail price for gasoline for the balance of the year will not be more than 16 cents per gallon, (no tax). Oklahoma, Kansas and North Texas crude oil is $1.03 and $1.05 per barrel. Gulf Coast crude ranges from 85 to 95 cents.

James A. Carroll is superintendent of the Osage Indian Agency.

The question as to the names of the contractors who drilled the first well in the Cushing Field is answered by the information that Dunn Brothers drilled the B. B. Jones well on the Albert Barney farm, and Henry Gruber the C. B. Shaffer well on the Wheeler farm. The latter well is credited with having opened the pool.

Col. H. P. Langworthy has been promoted to be assistant treasurer of the Gulf Pipe Line Co. of Oklahoma.

John Williams Waltz, prominent oil operator in the Eastern Fields, dies at Oil City, Pa., at the age of 55 years.

The 35 independent refiners in Kansas and Oklahoma are running 56,000 bbls. per day to stills. In addition, Standard Oil Co.'s Neodesha, Kans., plant runs 7,000 bbls. The largest of the independent plants are those of the National Refining Co. at Coffeyville, 5,000 bbls. and Vinita Refining Co. at Vinita, 5,000 bbls., and the Waters-Pierce Co., Sand Springs, 5,900 bbls., and Texas Co., Tulsa, 5,000 bbls. The figures represent runs to stills, and not capacity.

10 Years Ago

September 6, 1923

Seminole County, Oklahoma, is definitely believed to be a future great oil region. Its six oil wells in Township 8-8 are producing 10,000 bbls. a day.

Eight companies in the Powell Field in Texas have an aggregate production of 150,000 bbls. per day out of a total of 166,000 bbls. Humble Oil & Refining Co. leads with 42,000 bbls.

Cash dividends of the Standard Oil group of companies for the third quarter of 1923 aggregated $31,666,251, and for the January 1-August 31 period aggregated $101,477,490. This was the largest distribution of cash dividends in a like period since the dissolution in 1911.

Mid-Continent crude oil prices advanced September 1. Oklahoma and Kansas crudes range from $1.10 for below 28 degrees up to $2.20 for 41 degrees and over.

Texas politicians are at it again. Ouster suits have been filed against Gulf Refining Co., Humble Oil & Refining Co., Texas Co., and the Producers & Refiners Corp. Other suits are expected.

James Connolly, one of the Connolly Brothers, oil producers, dies at his home in Bradford, Pa. He was a brother of David F., Henry and John A. Connolly, all Oklahoma oil men.

Government Expected to Establish Base Crude Price

(Continued from Page 8)

the Secretary made plain his policy not to immediately start the recommended plan in operation. This was a surprise to the committee, their expectations being that they had started the price fixing ball rolling and that approval would promptly be given to their intention by both the secretary and President Roosevelt. Instead of taking that course Mr. Ickes decided to see how control of production would work in establishing paying prices all along the line. The basis of General Johnson's opposition to price control was that, once production is brought within control and restricted to market demand prices would regulate themselves as a mater of course, taking care of increased costs caused by shorter hours of labor and increased pay for employes together with a reasonable increase in earnings by the oil companies. Mr. Ickes' statement made after securing the report of the committee was interpreted here as meaning that the industry will first be allowed to work out its own salvation by the same methods that were available before the oil code was adopted if the industry itself had been able to voluntarily control production to demand.

Allocation by States

Secretary Ickes set the daily national production at 2,409,700 bbls., prohibiting net withdrawals from storage except with his consent at 80,000 bbls. daily and holding importations down to average daily imports during the last six months of 1932.

The order of Secretary Ickes read:

Order under code of fair competition for the petroleum industry as approved by the President, August 19, 1933.

Pursuant to the provisions of Sections 3 and 4 of Article 3 of the code of fair competition for the petroleum industry approved by the President, August 19, 1933, under the provisions of Title 1 of the National Industrial Recovery Act, approved June 16, 1933, the current estimate of required daily production of crude oil to balance consumer demand for petroleum products has been found by the Department of the Interior to be 2,409,700 bbls. and the allocations among the several petroleum-producing states are hereby certified to be as follows:

State—	Bbls.
Arkansas	39,000
California	480,000
Kansas	111,000
Louisiana	70,000
Texas	975,200
Oklahoma	540,000
New Mexico	41,400
Rocky Mountain states	38,900
Appalachian states	94,200
Michigan	30,000
Total	2,409,700

The foregoing allocations shall be effective under the aforesaid code of fair competition as of 7 a.m., September 8, 1933.

It is hereby ordered that in accordance with Section 2 of Article 3 of the aforesaid code, until further notice there shall be no net withdrawals from storage without the approval of the planning and co-ordination committee and upon order of the administrator.

It is hereby further ordered that in accordance with Section 1 of Article 3 of the aforesaid code, until further notice, imports of crude petroleum and petroleum products shall be limited to an amount not exceeding the average daily imports of petroleum and petroleum products during the last six months of 1932.

Secretary Ickes sent telegrams Saturday night to the governors of the oil states, informing them of the daily allocation as it affects their states.

In view of the fact that California has no state regulatory agency Secretary Ickes designated the central production committee of that State a voluntary organization to compile production quotas for his guidance.

The California central proration committee is composed of Neal Anderson, representing Huntington Beach area; A. H. Bell, representing Seal Beach-Alamitos; J. A. Bermingham, representing Rosecrans-Torrance; R. A. Broomfield, representing Santa Barbara County; Warren Clark, representing Montebello and West Coyote; W. S. Fisher, representing Coalinga; W. H. Geis, representing Long Beach; H. P. Grimm, representing Ventura County; Joseph Jensen, representing Los Angeles-Inglewood; Laurence Kelly, representing Playa Del Rey; Emil Kluth, representing Santa Fe Springs; Ralph Lloyd, representative at large; R. R. McGuire, representing Elk Hills-Buena Vista Hills; H. F. Owen, representing Midway-Maricopa; William Reinhardt, representing Kettleman Hills; R. A. Sperry, representing Lost Hills-Belridge; J. U. Stair, representing Dominguez; Lawrence Van Der Leck, representing Brea-Richfield; Lloyd Williamson, representing Kern-East Side Fields.

Ickes Interviewed

Secretary Ickes, when asked if the curtailment of production would result in an early increase in the price of gasoline and other petroleum products, expressed the hope that the increase, if any, would be a moderate one.

"We are going to watch very carefully the price of gasoline," said the Secretary, "and I hope it will not get out of a fair and proper relation to the price of crude oil. I hm, of course, referring to retail prices."

If they get out of relationship with prices of crude he will promptly issue a price fixing order. On the other hand refiners, distributors, wholesalers and retailers will not be permitted to sell below the cost of manufacturing and reasonable marketing cost. Dollar oil can come but it must have reasonable relationship to the price of gasoline.

The curb placed on production is regarded by oil men here as amounting to a little more than 10 per cent.

Asked about that part of the order which until further notice limits imports of crude petroleum and petroleum products, Mr. Ickes said that this plan, limiting such imports to the average daily foreign receipts during the last six months of 1932, would be rigidly imposed.

The fact that the committee did not take any action in the matter of price fixing Saturday night, Secretary Ickes said, was because there was no immediate necessity for such action.

"It did not seem advisable," he added, "to fix prices today. If we can bring production and consumption to speaking terms, then we can take up the other problems as they come up in the regular order of things."

"We wanted to see what would be the effect of allocations based on consumer demand," he said. He did not know that it would be necessary to fix prices but felt that supply should be balanced with demand before doing so, in any event. Referring to the price fixing powers in the code, he said, "Merely because you have powers does not mean that you have to use them."

Comment on Code

The following statement was given out by H. F. Sinclair, chairman, executive committee, Consolidated Oil Corp.

"The membership of the committee appointed by the President to co-operate in the administration of the oil code will create immediate confidence. Everyone interested in the industry owes the President a debt of gratitude for the way in which he has solved the difficult problem of setting up the administrative body to function under the code.

"Since the manner in which the code is administered, or changed as may be necessary, will determine the measure of its success, I am pleased that these functions are in such good hands. The committee represents every phase of the industry and every section of the country. Its members have been identified with constructive policies looking to stabilization of the business. There is every reason to expect harmonious and helpful co-operation between Secretary Ickes and members of the planning and co-ordination body. Every one of us should go to work to bring this auspicious start to a successful conclusion."

A sturdy base from which the oil industry can build upward out of chaos to profitable stability was the view that James A. Moffett, administration aid, took of the code.

"I think this code and committee will speed the stabilization of the industry," Moffett said in an informal interview, "and I am happy at the opportunity to help carry it out.

"It will put the industry on a sound basis, and I believe it will be so strong that it will be able to stay there with little difficulty and meet its increased costs of labor."

C. B. Ames, chairman of the board of directors of the Texas Co., said:

"We have a good code. The members of the planning and co-ordination committee are good men. I hope the industry can now forget its differences and pull together. The fundamental problem is to bring production of crude oil into balance with consumptive demand. This problem is now committed to Secretary Ickes and it is to be hoped that the various state commissions will support him 100 per cent. The Texas Co., now as always, is prepared to cordially co-operate with the administration."

J. C. Van Eck, president of the Shell Union Oil Corp., said "the oil code as approved by the President is one which will permit the industry to live and to prosper."

A. W. Walker, Jr., president of the Texas Petroleum Council, said his organization would extend full co-operation to the President's committee in applying the oil code.

Mr. Walker said he believed the President had selected "a strong and representative committee," and expressed confidence that "under its management the code will have an immediate stabilizing effect upon the industry in the nation and in Texas."

"We stand ready to do anything possible to make the code a success and to see that its provisions are complied with," Mr. Walker stated.

Continental Oil Co. Advances Its Crude Oil Prices 20 Cents Per Bbl. Sept. 5

By JAMES McINTYRE

The Continental Oil Co., effective Tuesday morning, September 5, advanced its crude oil prices in Kansas, Oklahoma and North Texas 20 cents per barrel on all grades from below 29 degrees in gravity up to 40 degrees and over, making its new prices in Kansas and Oklahoma range from 58 to 82 cents, and its North Texas prices from 48 to 72 cents.

The Continental's new prices were 10 cents higher than the prices of most of the buyers in the three areas named, although the Sun Oil Co. in Oklahoma and East Texas was paying 15 cents over the Carter-Humble price schedules and the Barnsdall Refineries, Inc. in Oklahoma was paying 5 cents per barrel over the Carter Oil Co.'s schedule in that State.

With the Continental Oil Co.'s new postings, the industry was confronted Tuesday morning with four price schedules in Oklahoma.

Thirty-six gravity oil was posted by Continental at 74 cents, by Twin State (Sun Oil Co.) at 79 cents, Barnsdall Refineries, Inc. at 69 cents and all other purchasers at 64 cents.

Mr. Moran's Statement

D. J. Moran, president of the Continental Oil Co. issued a statement along with the company's announcement of its new price schedule.

"Subsequent to our first announcement relative to the Continental Oil Co.'s position on crude prices the President named the oil code planning and co-ordinating committee. This company is pleased with the selection made and anxious to co-operate in every way with its activities and does not wish to be in conflict with the committees' deliberations. The oil producing states have not received their suggested allocations and it is hardly conceivable that any state will refuse to give them immediate support and a fair trial.

"With the foregoing fully in mind the Continental Oil Co. is making effective at 7 a. m. September 5, a posted price schedule for Oklahoma and Kansas of 82 cents for crude of 40 gravity and above with a 2-cent differential for each lower degree of gravity down to 58 cents for below 29 gravity. For North Texas the price schedule will be 72 cents for crude of 40 gravity and above with the same 2-cent differential down to 48 cents for below 29 gravity.

Early Crude Rise

"The 10-cent increase over that now generally paid by major buying units will compensate for the delayed decision on our part and is in anticipation of an early upward adjustment of these prices when the oil producing states have acquiesced in Secretary Ickes' pronouncement or in an equitable substitute for it."

The Continental Oil Co. is said to be third in rank among the large oil producers in Oklahoma and Kansas and its postings therefore have an important bearing on the price structure in Kansas, Oklahoma and North Texas. The Barnsdall Refineries, Inc. runs its purchased crude from pools in the Osage Indian Nation in Oklahoma.

The Twin State's purchases in Oklahoma are confined largely to the Cushing and Yale Pools.

97 Per Cent Tank Tables

The Stanolind Crude Oil Purchasing Co. joined other purchasers in the statement that its prices are for quantities computed by use of the customary 97 per cent tank tables. If any other basis of computation is used the prices will be decreased or increased so that the total amount paid will equal the amount which would be due using the 97 per cent tank tables.

Carter Meets Price

The Carter Oil Co. met the Continental Oil Co.'s prices in Kansas and Oklahoma, effective September 6, but started its schedule at below 25 degrees, 50 cents; 25-25.9 degrees, 52 cents, with 2 cents added for each degree up to 40 degrees and over at 82 cents.

Tentative Allowable Fixed for Oklahoma

OKLAHOMA CITY, Okla., Sept. 5.—Corporation Commissioner Walker and State Umpire Armstrong met Tuesday morning and made tentative allowables for prorated fields in Oklahoma effective September 8, pending a hearing which may be held on September 15, or which may be delayed until September 30.

The allowables set were as follows: Oklahoma City, 214,716 bbls., a reduction of 36,821 bbls. below the present allowables.

Class B, 124,529 bbls., or a reduction of 20,865 bbls.

Class C, 20,055 bbls., a reduction of 3,682 bbls.

Class D, 700 bbls., no change.

Stripper wells 180,000 bbls., no change.

Total, 540,000 bbls., a reduction of 61,368 bbls.

An emergency order covering this was expected to be issued late Tuesday.

Hints of Practical Value

By L. G. E. BIGNELL
Petroleum Engineering Editor

Elongation of Pipe in Tension

The elongation of pipe in tension due to its own weight varies as the square of its length.

$$e = \frac{72VL^2}{E}$$

where
e = elongation in inches
V = wt. per cu. in. = .2833
L = length in feet
E = modulus of elasticity = 30,000,000

If a pipe of given length is suspended, the stress in the metal is proportional to its length.

$$S = 12VL = 3.4L$$

The amount of additional load that can be applied to the lower end of the pipe is then the difference between the safe load and the weight of the pipe. Expressed in terms of unit stress:

$$S_1 = S_s - S$$

where
S_1 = additional stress
S_s = safe stress
S = stress due to its own weight

The elongation of pipe due to a load applied at the bottom and expressed in the same terms is:

$$e = 12\frac{S}{E}$$

Substituting S_1 for S in this relation, the amount of additional elongation e_1 required to bring the stress up to S_s is:

$$e_1 = \frac{12L}{E}(S - 3.4L)$$

None of these relations discussed above take into consideration the weight of the fluid in the hole. The weight of casing in water is .2455 pound per cubic inch or 86.8 per cent of the value in air. In mud weighing 90 pounds per cubic foot, its weight would be .230 pound per cubic inch or 8.1 per cent of its weight in air.

It is customary to use a float plug, thus relieving a large part of the tension in setting casing. With mud weighing 10 pounds per gallon and 4½-inch 16 pounds per foot casing, the load is reduced to 56 per cent of the dead weight. Under the same conditions, 13⅜-inch 61 pounds per foot casing can be floated. It should be kept in mind, however, that the fluid column must not be allowed to become so great as to endanger the casing in collapse.

As an example, suppose an oil string 8,000 feet long is landed on bottom and then the hole washed free from mud and brought in through tubing. The fluid level in the hole may later in the life of the well stand close to the bottom, leaving the oil string suspended in gas. Assume the temperature and pressure conditions such that the density of the gas is the same as air, then the elongation of the pipe will be 43.5 inches, while in mud its elongation was only 35.4 inches, or a difference of 8.1 inches. Therefore, holding the casing above bottom a foot or two would eliminate any possibility of column loading.

NEW POTTER COUNTY LINE

WELLSBORO, Pa., Sept. 2.—Plans for construction of a 10-inch pipe line from Potter County gas field were announced by the Lycoming Producing Corp., a subsidiary of Standard Oil Co. of New Jersey.

The line will be 40 miles long and will connect with a 20-inch line that runs to Syracuse. It will be the fourth major line to carry natural gas from Potter County wells.

COMPLETE RUNNELS PLANT

Roy L. Hill, county attorney for Runnels County, has completed the construction of a 50-bbl. per day skimming plant on the east edge of Ballinger. The plant will process crude produced in the McMillan Pool, a few miles to the north of town.

California Crude Oil Prices

STANDARD OIL CO. OF CALIFORNIA
(Effective June 26, 1933)

For current purchases of crude oil at the well (unless otherwise specified). (All gravities above those quoted take highest price offered in that field.

	Signal Hill	Seal Beach, Alamitos Heights	Huntington Beach	Inglewood	Playa Del Rey*	Olinda-Brea Canyon	Athens, Rosecrans, Domingues	Torrance	Richfield	Whittier, La Habra	Montebello	Coyote Hills	Santa Fe Springs	Midway-Sunset, Elk Hills, Buena Vista Hills	Lost Hills	Coalinga
14-14.9	$0.55	$0.55	$0.55	$0.55	$0.55	$0.55	...	$0.55	$0.55	$0.55	$0.55	$0.55	...	$0.52	$0.52	$0.52
15-15.9	.55	.55	.58	.58	.55	.58	...	.55	.55	.55	.55	.55	...	.53	.52	.53
16-16.9	.55	.55	.60	.61	.58	.61	...	.57	.55	.57	.55	.55	...	.53	.52	.52
17-17.9	.57	.55	.63	.64	.61	.64	...	.60	.59	.60	.55	.57	...	.53	.53	.52
18-18.9	.60	.56	.65	.67	.64	.67	...	.63	.62	.62	.55	.60	...	.53	.56	.52
19-19.9	.63	.60	.68	.70	.67	.69	...	.65	.66	.65	.55	.63	...	.54	.59	.52
20-20.9	.66	.63	.71	.73	.70	.72	...	.68	.69	.68	.55	.65	...	.57	.62	.53
21-21.9	.69	.67	.73	.77	.73	.75	...	.70	.72	.71	.58	.68	$0.60	.61	.65	.56
22-22.9	.71	.70	.76	.80	.76	.77	...	.72	.75	.74	.60	.71	.64	.65	.68	.59
23-23.9	.74	.73	.78	.83	.79	.80	$0.68	.75	.78	.76	.64	.73	.67	.69	.70	.61
24-24.9	.77	.77	.81	.86	.82	.82	.71	.78	.82	.79	.67	.76	.70	.73	.73	.64
25-25.9	.80	.80	.83	...	.85	.85	.76	.80	.85	...	.71	.79	.73	.76	.76	.67
26-26.9	.82	.83	.86	...	.88	.88	.79	.83	.88	...	.75	.82	.76	.80	.79	...
27-27.9	.85	.87	.88	...	...	.91	.82	...	.92	...	...	.84	.80	.83	.81	...
28-28.9	.88	.90	.91	...	...	.94	.86	...	.95	...	...	.87	.83	.87	.84	...
29-29.9	.90	.93	.93	...	...	...	.89	...	.98	...	...	.90	.86	.91	.87	...
30-30.9	.93	.97	.96	...	...	...	.93	...	...	...	...	.93	.89	.95	.89	...
31-31.9	...	...	...	...	...	...	.97	...	...	...	...	.96	.92	.98	...	...
32-32.9	...	...	...	...	...	...	1.00	...	...	...	...	.98	.96	1.02	...	...
33-33.9	...	...	...	...	...	...	...	...	...	...	...	1.01	.99	1.06	...	...
34-34.9	...	...	...	...	...	...	...	...	...	...	...	1.03	1.02	...	...	...
35-35.9	...	...	...	...	...	...	...	...	...	...	...	...	1.05	...	...	...
36-36.9	...	...	...	...	...	...	...	...	...	...	...	...	1.08	...	...	...
37-37.9	...	...	...	...	...	...	...	...	...	...	...	...	1.11	...	...	...
38-38.9	...	...	...	...	...	...	...	...	...	...	...	...	1.14	...	...	...

Elwood—F.o.b. ship, 33-33.9 degrees, 91 cents; 34-34.9, 94 cents; 35-35.9, 97 cents; 36-36.9, $1; 37 degrees and over, $1.03.
Kettleman Hills—33-33.9 degrees, 76 cents; 34-34.9, 78 cents; 35-35.9, 80 cents; 36-36.9, 83 cents; 37-37.9, 84 cents; 38-38.9, 86 cents; 39 degrees and over, 88 cents.
Newhall, McKittrick and Kern River—14 degrees to 19 degrees and over, 53 cents.
Wheeler Ridge—14 to 20.9 degrees, 52 cents; 21-21.9, 55 cents; 22-22.9, 57 cents; 23-23.9, 60 cents; 24-24.9, 63 cents; 25 degrees and over, 66 cents.
The Union Oil Co. met all Standard Oil Co. of California prices in fields where both companies purchase, and posted as follows in East Coyote: 14 to 15.9 degrees, 55 cents; 16-16.9, 57 cents; 17-17.9, 60 cents; 18-18.9, 62 cents; 19-19.9, 65 cents; 20-20.9, 68 cents; 21-21.9, 71 cents; 22-22.9, 74 cents; 23-23.9, 76 cents; 24 degrees and over, 79 cents. Santa Paula, 14 to 18.9 degrees, 55 cents; 19-19.9, 57 cents; 20-20.9, 60 cents; 21-21.9, 62 cents; 22-22.9, 65 cents; 23-23.9, 67 cents; 24-24.9, 70 cents; 25-25.9, 72 cents; 26-26.9, 75 cents; 27-27.9, 77 cents; 28-28.9, 80 cents; 29-29.9, 83 cents; 30 degrees and over, 85 cents. Orcutt, 16 to 18.9 degrees, 52 cents; 19-19.9, 54 cents; 20-20.9, 57 cents; 21-21.9, 61 cents; 22-22.9, 65 cents; 23-23.9, 69 cents; 24-24.9, 72 cents; 25-25.9, 76 cents; 26 degrees and over, 80 cents. Lost Hills and Belridge schedule same as that of the Standard Oil Co. of California in Lost Hills; Mount Poso, Kern River, McKittrick schedule same as Standard's Newhall, McKittrick and Kern River schedule except that Union Oil Co. posts 47 cents for 11 to 13.9 degrees, inclusive. Union Oil Co.'s schedule also posts 47 cents per barrel for 11 to 13.9 gravity in Coalinga, Midway-Sunset, Elk Hills and Buena Vista Hills.
Texas Co. effective June 26, 1933, met Standard Oil Co. of California prices in Signal Hill, Alamitos Heights, Huntington Beach, Torrance, Richfield, Montebello-North Whittier, Santa Fe Springs, and pays following prices in Shiells Canyon, South Mountain and Santa Paula: 14 to 14.9 degrees, 55 cents; 15-19.9, 57 cents; 20-20.9, 60 cents; 21-21.9, 62 cents; 22-22.9, 65 cents; 23-23.9, 67 cents; 24-24.9, 70 cents; 25-25.9, 72 cents; 26-26.9, 75 cents; 27-27.9, 77 cents; 28-28.9, 80 cents; 29-29.9, 83 cents; 30 gravity and over 85 cents.
Associated Oil Co., effective June 26, 1933, adopted Standard Oil Co. of California's prices with a few reservations in the upper brackets. In Huntington Beach the highest price is 86 cents for 26 degrees and over. In Seal Beach and Alamitos Heights, top price is 83 cents for 26 degrees and over; Coyote Hills, top price is 73 cents for 33 degrees and over. In Richfield, top price is 85 cents for 25 degrees and over; Torrance, top price is 80 cents for 25 degrees and over; Santa Fe Springs, top price is $1.05 for 35 degrees and over; Midway-Sunset, Elk Hills and Buena Vista Hills, top price is 95 cents for 30 degrees and over; the Associated Oil Co. also posts 47 cents per barrel for 11 to 13.9 gravity oil in McKittrick, Kern Front, Kern River, Midway-Sunset, Elk Hills, Buena Vista Hills and Coalinga.
General Petroleum Co., effective June 26, 1933, posted same prices as Standard Oil Co. of California with some reservations in the upper grades in some fields and in lower grades in one field: Midway-Sunset, top price is 98 cents for 30 degrees and over; Alamitos Heights, top price of 83 cents for 26 degrees and over; Santa Fe Springs, bottom price of 70 cents for 24-24.9; Richfield, top price of 85 cents for 25 degrees and over; Brea Canyon, Olinda, top price of 85 cents for 25 degrees and over; Torrance, top price of 80 cents for 25 degrees and over.

Crude Oil Prices

(Continued from Page 25)

ed by Magnolia Petroleum Co. and Gulf Refining Co.
*H. L. Hunt, Inc. †Louisiana Oil Refining Co.

Eastern States

SOUTH PENN OIL CO.
(Effective August 30, 1933)

Pennsylvania Grade Oil in National Transit Lines (Bradford Field)	$2.25
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	2.02
Penna Grade Oil in Eureka Pipe Line Lines	1.97
Penna Grade Oil in Buckeye Pipe Line Lines	1.82
Corning Grade Oil in Buckeye Pipe Line Co.'s lines (Aug. 31, 1933)	.95

TIDE WATER PIPE CO.
(Effective August 30, 1933)

Bradford, Pa.	$2.25
Allegany, N. Y.	2.25

PENNZOIL CO.
(Effective August 30, 1933)

Pennsylvania Grade Oil in National Transit Lines:	
Group A (Includes Cochran, Franklin, Hamilton and Doolittle districts.)	$2.17
Group B (Includes Titusville district.)	2.16
Group C (Includes Turkey and Tidioute districts.	2.15
Group D (Includes Bear Creek and Porkey districts.	2.14
Group E (Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredin, McJunkin, Jameson, Kennerdell, Emlenton, Tiona, Lacy and Kinsua districts.	2.13

Price depends on length of pipe line haul to plant at Oil City.

PURE OIL CO.
(Effective August 31, 1933)

Cabin Creek, W. Va.	$1.97
Bradford Hollo, W. Va.	1.97

Rocky Mountain States

Iles, light (Aug. 26, 1933)	$.60
Iles, heavy (Aug. 26, 1933)	.54
Florence, Colo. (June 17, 1933)	.36
Fort Collins and Wellington, Colo. (June 17) (See Salt Creek prices)	
Cat Creek, Mont. (June 17, 1933)	.52
Big Muddy (Aug. 25, 1933)	.68
Frannie, light (Aug. 26, 1933)	.51
Frannie, heavy (Aug. 26, 1933)	.40
Salt Creek and La Barge (Aug. 26, 1933) See Stanolind Mid-Continent price schedule	
Grass Creek, light (Aug. 26, 1933)	.52
Grass Creek, heavy (Dec. 15, 1932)	.45
Elk Basin (Aug. 26, 1933)	.52
Rock Creek (Aug. 25, 1933)	.66
Dutton Creek (July 8, 1933) See Mid-Continent gravity prices.	
Lance Creek (Dec. 16, 1932)	.52
Poison Spider (Mar. 8, 1931)	.70
Hudson (June 2, 1931)	.55
Lander (Mar. 6, 1931)	.40
Rex Lake (Feb. 22, 1930)	1.10
Osage (Jan. 18, 1933)	.59
Lost Soldier (Aug. 28, 1933)	.52
Hamilton Dome (Dec. 16, 1932)	.35
Torchlight (Aug. 26, 1933)	.52
Greybull (Aug. 26, 1933)	.52
Pondera (June 17, 1933)	.75
Sunburst (Aug. 25, 1933)	1.00
Hogback, N. Mex. (Aug. 26, 1933)	.35
Lea County, N. Mex. (See note)	.40
Maljamar (June 19, 1933)	.35
Artesia-Jackson (July 11, 1933)	.45

Note—Salt Creek, Cat Creek, Dry Creek, Dallas-Derby, Hudson, Greybull, Hogback and Iles by Stanolind Oil & Gas Co. Elk Basin, Grass Creek light, Big Muddy, Rock Creek and Sunburst by Ohio Oil Co. on August 25. Lost Soldier posted by Producers & Refiners Corp. Artesia, Jackson and Maljamar posted by Continental Oil Co. Lea County, effective August 24, by Humble Oil & Refining Co., and on August 25 by other buyers; Fort Collins, Wellington, Orchard, Florence, Big Muddy, Cat Creek, Rattlesnake and Table Mesa by Continental Oil Co. Osage posted by Arro.
*Continental Oil Co.

Middle Western States

OHIO OIL CO.
(Effective August 25, 1933)

Lima	$.95
Illinois	.87
Princeton, Ind.	.87
Plymouth	Shut in
Western Kentucky	.82
Midland, Mich. (Aug. 7, 1933)*	.80
Somerset, Ky. (Aug. 29, 1933)	.87
Hart County, Ky. (Aug. 4, 1933)	.85
Muskegon, Mich. (Mar. 27)	See note

*Posted by Pure Oil Co. Producers Pipe Line Co. pays 5 cents per barrel over Pure Oil Co.'s posted price. Muskegon: All companies pay $1 per barrel effective March 27. Somerset, Ky., crude purchased by Ashland Refining Co., Ashland, Ky., and posted price includes premium. Hart County, Kentucky, crude purchased by Stoll Refining Co.

Canada

Ontario (Aug. 25, 1933):	
Petrolia*	$1.86
Oil Springs*	1.92
Turner Valley (Aug. 26, 1933)†:	
Clear naphtha	$3.16
Discolored naphtha	2.92
Crude oil, 50 gravity	2.71
Crude oil, 45 to 49.9	2.16
Crude oil 40 to 44.9	1.63

*Imperial Oil, Ltd. †Imperial Oil, Ltd., and Regal Oil & Refining Co.

Mexico

Panuco*	$0.432

*F.o.b. ship, based on June transactions and exclusive of production and export taxes and bar dues.

CALIFORNIA PRICES ADVANCED

LOS ANGELES, Calif., Sept. 5.—The Standard Oil Co. of California, effective September 6, has increased crude oil prices in California fields. Twenty-seven gravity Signal Hill crude has been increased 15 cents per barrel, bringing the present price to $1 per barrel. Comparable prices will be announced for other gravities in this and other fields.

Late Fields

ARIZONA

Roy A. Sharp of Wichita, Kans., and G. O. Ticer of Shawnee, Okla., have finished a troublesome fishing job and are drilling again at their test 28 miles north of Prescott, on Highway 89 and the Santa Fe railroad line. Legal location is NE Section 34-18n-2w, Yavapai County, Arizona.

WASHINGTON

SEATTLE, Wash., Sept. 2.—Milton S. Hurwitz, secretary, Northwest Oil and Gas Association, Seattle, states that the Hoh River Oil Co.'s No. 2 Gilkey, Section 12-26n-14w, Jefferson County, Washington, after swabbing and bailing five days on production is making 25 bbls. daily of 40 gravity paraffin crude from 22-foot Sims sand topped at 768 feet.

Contracts for Merging of Far Eastern Units Signed

NEW YORK, Sept. 4.—Signatures have been affixed to contracts looking to the consolidation of Far Eastern producing, refining and marketing organizations of the Standard Oil Co. (New Jersey) with the marketing organizations of the Socony-Vacuum Corp. in the Far East. Stockholders of the Socony-Vacuum Corp., it is understood, will vote on the consolidation soon. The amalgamated company will have assets of $150,000,000 to $200,000,000.

Socony-Vacuum properties affected include its marketing facilities in Japan, China, British India, Australia, New Zealand, Oceania, South and East Africa. The Standard Oil Co. (New Jersey), besides its producing and refinery properties in the Dutch East Indies, will contribute its recently acquired marketing outlets in Australia and New Zealand. Refineries now are running 25,000 bbls. of crude oil daily, which represents the company's total daily output from its Far Eastern properties.

W. B. Walker, vice president of the Socony-Vacuum Corp., is slated for president of the new company and G. S. Walden, of the Standard Oil Co. (New Jersey), the senior vice president. Additional vice presidents, it is said, will be E. F. Johnson, of the New Jersey company, and P. W. Parker and H. Dundas, of Socony-Vacuum. Other officers and directors will be chosen from the foreign departments of both companies.

Texas Commission Calls Hearing on September 16

AUSTIN, Tex., Sept. 5.—The Texas Railroad Commission today called a hearing for September 16 on revised proration allowables for all Texas fields. Present allowable is approximately 1,200,000 bbls. Federal authority has allocated Texas 975,200 bbls., effective September 8. The Railroad Commission telegraphed the Federal oil administration, pointing out it cannot make new orders for Texas fields earlier than September 16 and asked whether the Federal order will be stayed to that starting date.

18,000,000-FOOT GASSER

COUDERSPORT, Pa., Sept. 2.—The Electro-Geometer Corp.'s deep test natural gas well on the George Estes farm, Genesee Township, was drilled deeper to 5,203 feet and increased its production to 18,000,000 feet per day. It was shut in.

Located on the Hebron anticline, 5 miles northeast of the nearest producer, the well practically doubles the extent of the Hebron Field. It is 14 miles northeast of Coudersport and but 1,800 feet from a dry hole previously drilled by the Hammondsport Natural Gas Co.

The new well is the thirteenth deep-sand gas producer to be brought in in Potter County, and brings the total open flow volume in the county to 156,000,000 feet.

Armstrong, Assisted by McWilliams, to Be in Charge of Oklahoma Proration

OKLAHOMA CITY, Sept. 2.—The Oklahoma Corporation Commission by a vote of 2 to 1, Walker and Hughes against Walton, removed the state proration umpire, L. Carl Giles, and appointed W. J. Armstrong in his place. Armstrong has been state oil and gas conservation officer for a number of years.

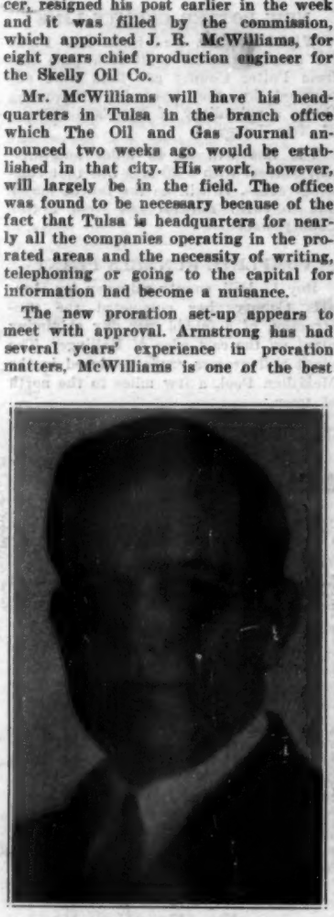
The commission also removed Mrs. I. L. Huff as chief clerk of the proration department, and put E. G. Dahlgren in her place. Dahlgren had been deputy chief clerk.

George Kinney, assistant proration officer, resigned his post earlier in the week and it was filled by the commission, which appointed J. R. McWilliams, for eight years chief production engineer for the Skelly Oil Co.

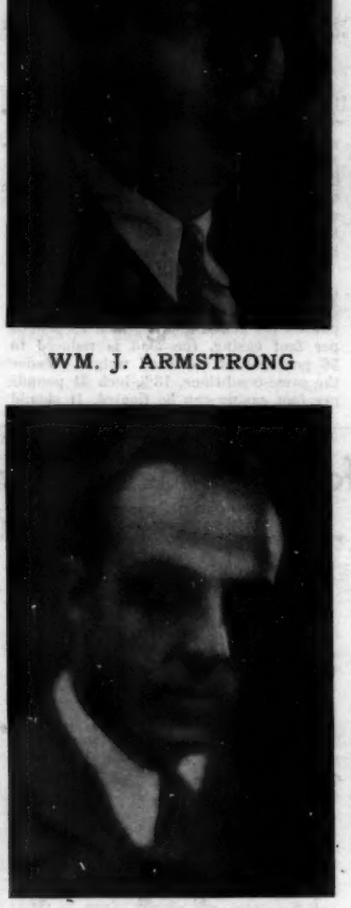
Mr. McWilliams will have his headquarters in Tulsa in the branch office which The Oil and Gas Journal announced two weeks ago would be established in that city. His work, however, will largely be in the field. The office was found to be necessary because of the fact that Tulsa is headquarters for nearly all the companies operating in the prorated areas and the necessity of writing, telephoning or going to the capital for information had become a nuisance.

The new proration set-up appears to meet with approval. Armstrong has had several years' experience in proration matters. McWilliams is one of the best known petroleum engineers in the State, and Dahlgren has been active in the office work connected with proration for several years.

WM. J. ARMSTRONG



J. R. McWILLIAMS



E. G. DAHLGREN

MOTOR ROAD CONTRASTS

CHICAGO, Sept. 4.—Lieut. Col. Brainerd Taylor of the United States Army told the International Automotive Engineering Congress today that:

In the United States, the average ratio of good motor roads to area of land is 1 mile of highway to 1 square mile.

In France, the ratio is 2 miles of road to 1 mile of land.

The figures for Mexico and South America are 1 to 500.

The motorist in China and many sections of Asia and Africa will find just 1 mile of road in every 1,700 square miles.

PROGRESS ON MILDAND LINE

MUSKEGON, Mich., Sept. 4.—The Consumers Power Co. is starting work on a gas line from the Mount Pleasant Field to Saginaw and Bay City, it was announced by Russell B. Palmer, district manager. A shipment of 12, 10 and 6-inch pipe for the 22.2-mile line has been received in Saginaw and is being welded in preparation for laying. The new line will supplement an old 4-inch line between Midland and the Zilwaukee steam plant of the Consumers company near Saginaw which has been used for testing the natural gas supply in the Broomfield Township area of the Mount Pleasant Field.

The Consumers company is laying a second submarine line under the Chippewa and Tittahawassee Rivers at Midland. The new line is expected to be completed during October. A new line from Midland west to producing wells in the Central Michigan Field also will be laid this fall if necessary to meet the demands for the two eastern Michigan cities.

Allocation Distributed by California Committee

LOS ANGELES, Calif., Sept. 5.—Convening in special session Monday morning, the California central proration committee, consisting of 19 members, worked far into the night perfecting plans to facilitate prompt enforcement of the oil code. California's allocation of 480,000 bbls. is substantially higher than the previous daily allotment of 459,600 bbls. established by the proration committee for August. Production during the past several weeks has been averaging approximately 500,000 bbls. daily, due to drilling activities in Huntington Beach town lot area and general excesses in other fields where operators have been overproducing in order to secure maximum production before the code deadline.

Under the new schedule just approved by the central proration committee, the allowable daily production of San Joaquin Valley fields is increased 11,100 bbls. Coastal fields have been given an increased allowance of 2,800 bbls. per day and the allotment of Los Angeles Basin fields is stepped up 6,500 bbls. daily. With the exception of a few minor reductions, all fields of the State were either given higher allowables or assigned their previous quotas. The largest increases were given Coalinga, 3,950 bbls.; Kettleman North Dome, 3,000 bbls.; Lost Hills, 650 bbls.; Midway-Sunset, 2,000 bbls.; Long Beach, 3,000 bbls.; Huntington Meach, 2,300 bbls.; Dominguez, 2,000 bbls.; Brea Olinda, 1,400 bbls., and Elwood, Santa Maria and Ventura Avenue, 1,000 bbls. each. The only substantially decreased allotments were at Playa Del Rey and Santa Fe Springs, each of which was given an allowable of 1,300 bbls. per day below previous quotas.

The new proration schedule will be effective from September 8 to September 30, at which time a monthly schedule will be prepared for October. It is the present intention to re-establish new potentials and allotments on a monthly basis as in the past.

Refinery Market in Chicago Area Firm

(Continued from Page 29)

day, September 5. Current prices are as follows, three-eighths of a cent higher: third grade U.S.M., 4 to 4¼ cents; regular U.S.M., 4¾ to 5 cents; premium U.S.M., 5¼ to 5½ cents. Several refiners who have withdrawn from the markets name prices half a cent higher than these. The 60-62 400 endpoint gasoline, 4⅛ to 4⅜ cents; 64-66 375 endpoint gasoline, 4¼ to 4½ cents; 68-70 360 endpoint gasoline, 4⅜ to 4⅝ cents; aviation, fighting grade, 5⅛ to 5⅝ cents.

Special Naphthas

Special naphtha sellers are reluctant to take on business at this time, and at least one, Deep Rock Oil Corp., has definitely withdrawn from the open markets. Prices were quoted nominally a quarter of a cent higher as follows: Cleaners' naphtha, 6 to 6¼ cents; lacquer diluent, 180-250, 7¼ to 7½ cents; lacquer diluent, 140-200, 8¼ to 8½ cents; Stoddard solvent, 5½ to 5¾ cents; rubber solvent, 6 to 6¼ cents; petroleum thinner, 5 to 5¼ cents; V.M.&P. naphtha, 5¾ to 6 cents; petroleum spirits, 4¾ to 5 cents.

Kerosene Stalled

There were no changes noted in the kerosene tank car markets.

Distillates and Fuel Oils

Higher prices were quoted on distillates and zero fuel oils. Prices were: 32-36 straw zero, 2⅛ to 2¼ cents; 38-40 straw zero, 2¼ to 2⅜ cents; prime white distillates, 2⅜ to 2½ cents. Industrial gas oil was quoted at 1½ to 1¾ cents, but little material was found available. The 28-30 zero fuel oil moved up to 75 to 85 cents, with certain refiners quoting still higher prices; 26-28 zero fuel oil was quoted at 67½ to 75 cents; 22-26 zero fuel oil, 62½ to 65 cents; 18-22 zero fuel oil, 57½ to 60 cents, and below 18 fuel oil, 40 to 45 cents.

Develop Simple Type of Friction Machine

(Continued from Page 10)

put of the motor could be measured to compute the coefficient of friction.

Conclusions

The results of these tests lead to the following conclusions:

1. It is possible to successfully compare lubricants in oiliness value by the load per square inch necessary to break through the oil film, providing, a definite machine is used and definite procedure is followed.
2. Check tests can be run on the same lubricants, but a tolerance should be established.
3. The bearing material for comparing lubricants on a general basis should be of hardened tool steel. The bearings can be of any desired material for special cases.
4. The rate of application of load has little effect on the load carrying capacity of the lubricant.
5. The size of the bearing does not effect the unit load carrying capacity of the lubricant.
6. The rubbing speed is a very important factor in the rupture of the oil film.
7. The low temperatures, from room to 150° F., have little effect on the load carrying capacity of the lubricant.
8. The same lubricant gives very different results with different bearing materials.
9. Duplication of polished bearing surfaces is necessary for check tests on the same lubricant.
10. Careful cleansing of the test bearings after polishing is of the greatest importance.

Co-operation of Engineers Showing Favorable Results

(Continued from Page 16)

their automotive systems in proper adjustment. In his paper, Mr. White said that drivers do not realize the gradual loss of performance and efficiency as adjustments incidental to combustion are not corrected from time to time. Possibility of disarrangement in the adjustments is given in the following example: Using a 6-cylinder engine, 4 to 1 gear ratio, 4-inch stroke, 90-inch wheel circumference, and 15 miles per gallon, in traveling 1,000 miles the ignition system functions 8,500,000 times; the pistons travel 2,100 miles; the valves operate 17,000,000 times; the fuel system and carburetor have split 402 pounds of gasoline (67 gallons) into 8,500,000 fractions (explosions) through high speed atomization.

"The failure of any of the motor's parts, incidental to combustion, will decrease the number of heat units which are usefully used in the engine, and increase the number exhausted," Mr. White said. "Therefore, the exhaust gases become a perfectly reliable guide to the motor's efficiency of operation."

Mr. White then explained the operation of the "Power Prover," and instrument which analyzes the potential heating value of exhaust gases, and which is on the order of a continuous, automatic calorimeter. The proper adjustments to be made are indicated in the meter readings.

Lubricating Oil Consumption

"Factors Affecting Oil Consumption," is the title of the paper presented by J. P. Stewart, head of the Automotive Division, Research and Development Laboratories, of Socony-Vacuum Corp., and T. H. Risk, engineer in this division. Feeling that the usual engine oil consumption test leaves much to be desired in precision, these investigators described a new method which they say provides a higher degree of precision besides shortening the time necessary for such determinations. They say:

"During the development of the method, it was found that the rate of oil consumption depends to a great extent on the rate of fuel consumption or mixture ratio. Even the change in metering rate of the carburetor caused by a change in barometric pressure during the day causes a measurable change in the rate of oil consumption. Two characteristics commonly believed to affect oil consumption are viscosity and volatility. The authors entered this phase of the work with the aim of studying these two characteristics separately." They found that while different engines and different operating conditions will modify the absolute values ascertained, it is evident that the frequent attempt to decrease oil consumption in automotive engines by the use of high viscosity oils can only be slightly successful, unless, accidently, an effective change in composition accompanies the change in viscosity.

In the matter of volatility no relationship with consumption could be established, and the authors point out: "The danger of accepting the distillation curve as a criterion of oil consumption is further evidenced by noting the changes in the distillation curve of an oil in service, as compared with the actual oil consumption change over the same time interval. Instead of the consumption decreasing as the test proceeded, as would be anticipated from the distillation curves, the consumption actually increased gradually over the first 16 hours, with a slight decrease over the final 8 hours. The flashpoint of an oil has often been taken as a criterion of oil consumption, but a plot of consumption against flash shows no better correlation than other measures of volatility. True there is a trend, but the measure cannot be accepted when two oils having the same flash give consumption rates differing by over 100 per cent."

In conclusion they say: "The futility of attempting to relate the ordinary characteristics of an oil to the rate of oil consumption in an engine, with our present knowledge, would seem to be manifest in our findings. It has not been found possible to find a satisfactory correlation between the consumption of an oil in an engine and any combinations of the values for the viscosity, volatility and viscosity temperature slope. These characteristics of an oil undoubtedly play a part but superimposed upon them is another characteristic which, so far, has not been evaluated, a characteristic which is related not so much to the type of crude from which the oil is made, but apparently to the refinement of the crude."

Extreme-Pressure Lub Tester

S. A. McKee, F. G. Bitner and T. R. McKee, of the Bureau of Standards, presented a paper describing an apparatus for the determination of load-carrying capacity of extreme-pressure lubricants. The operating characteristics of the machine used are such, these authors said, that automatic alignment is maintained between the two rotating test rolls so that the applied load is a true criterion of the actual pressure on the rubbing surfaces. The point at which lubrication fails is quite definite and may be readily determined while the machine is in operation. Over the operating range covered, they said, the test results obtained with this machine appear to rate the lubricants in reasonable agreement with ratings based upon service performance in automotive gears. They believe that the results obtained are sufficiently promising to justify co-operative work on the study of the load-carrying capacity of extreme-pressure lubricants in machines of the same fundamental design.

Sludge and Engine Performance

D. P. Barnard, E. R. Barnard, T. H. Rogers, B. H. Shoemaker, of the research laboratory of Standard Oil Co. (Indiana), and R. E. Wilkin, of the technical division of this company, are the authors of a paper entitled, "The "Effect of Sludge on Engine Oil Performance."

"Analyses have shown compositions (of sludge deposits) varying from large proportions of asphaltic material which undoubtedly did come from the oil to almost negligible proportions of such substances with a major part of the deposits consisting of 'blow-by' carbon, inorganic material and, occasionally, water," these investigators introduce their subject. The results arising from the presence of these deposits are almost as varied as their consistencies and range from accumulations in oil pans and other relatively stagnant locations which, when an engine is disassembled, appear quite objectionable but which actually do no harm, to deposits in such vulnerable spots as ring grooves, oil screens, and filters where actual interference with engine operation result. It appears reasonably certain, they continue, that the key to the presence of sludge deposits, regardless of form, lies in the oxidation of the oil to give the small amounts of asphaltic substances which are invariably present.

Diesel Developments

T. B. Rendel, of Shell Petroleum Corp., presented a paper in which a comparison is drawn between automotive Diesel and gasoline vehicles. "Due largely, of course, to the relatively high price of gasoline in Europe," Mr. Rendel said, "the Diesel engine has made very great strides in England and in the major countries of the Continent." According to Mr. Rendel there are now about 12,000 Diesel engine trucks and buses in use in the world. The governed speed in the Diesel is rather awkward from the standpoint of gear changing, Mr. Rendel pointed out, and the engine does not run as smoothly while idling as the gasoline engine. However, the Diesel shows superior acceleration from slow speed performance.

"Factors in Automotive Diesel Development," is the title of a paper of particular interest to refiners. The author is O. D. Treiber, of Hercules Motors Corp., who states succinently that the structure of oil molecules and their size not only affect the length of time to burn oil fuel to complete combustion, but affects the time lag of ignition and compression-ignition ratio, even to the extent of 8 compression ratios for an easy burning fuel up to 22 compression ratios for a hard oil to burn, and even then some oils will not burn at all by compression ignition.

"The oil refinery," Mr. Treiber said, "attends to making its gasoline equal to or better than a certain octane rating. In the same way Diesel fuel oil research is developing a similar rating with a modified C.F.R. engine and using, as an ignition quality rating, a heptane number. Many oil refiners know about this and can furnish Diesel fuels of an ignition quality equal to market demands. The rating number on this basis means a percentage of heptane in iso-octane which is a comparison in a compression ignition C.F.R. engine. The lowest numbers used will probably be from 70 to 80 depending on the compression ratio of the engine, degree of atomization and combustion chamber-area ratio to cylinder volume.

TABLE 1—SHOWING A FEW OF THE TEST RESULTS AND THE VARIATION IN READINGS ON THE SAME LUBRICANT SAMPLE

Oil sample	Test No.	Bearing material	Lbs./sq. in. on oil film	Max. difference in readings, lbs.	Average reading
L.T.1.	6	CR/CI	1,450		
	12	CI/CR	1,390		
	17	CI/CR	1,465		
	25	CI/CR	1,390	75	1,426
		CR/CR			
	5	CR/CR	1,390		
	15	CR/CR	1,413	23	1,402
	79	TS/TS	965		
	81	TS/TS	940	25	953
	82	CI/CI	890		
	84	CI/CI	815	75	855
L.T.2.	47	CR/CI	1,140		
	49	CR/CI	1,190		
	28	CI/CR	1,140		
	46	CI/CR	1,115	75	1,146
	35	CR/CR	765		
	38	CR/CR	740		
	40	CR/CR	790	50	765
	32	CI/CI	1,090		
	34	CI/CI	1,115	25	1,103
	39	TS/TS	715		
	41	TS/TS	790		
	50	TS/TS	790	75	765

TABLE 2—SHOWING A FEW OF THE TEST RESULTS AND THE VARIATION IN READINGS ON THE SAME LUBRICANT SAMPLE

Oil sample	Test No.	Bearing material	Lbs./sq. in. on oil film	Max. difference in readings, lbs.	Average reading
L.T.3	58	CR/CR	1,040		
	62		1,090	50	1,065
	59	CI/CI	1,565	0	1,565
	57	TS/TS	815		
	60		840	25	833
L.T.4.	67	CR/CR	865		
	75		965	100	915
	68	CI/CI	1,115		
	72		1,065	50	1,090
	53	TS/TS	990		
	69		1,040		
	71		990	50	1,006

The temperature of the lubricant during these tests ranged from ambient to not over 125° F.

TABLE 3—POUNDS PER SQUARE INCH LOAD AT THE FAILURE OF THE OIL FILM OF EACH LUBRICANT

Sample—	Test bearings CR/CI or CI/CR	CR/CR	CI/CI	TS/TS
L.T.1	1,426	1,402	855	953
L.T.2	1,146	765	1,103	765
L.T.3	not run	1,065	1,565	833
L.T.4	not run	915	1,090	1,006

TABLE 4—RATING OF SAMPLES

Sample—	Test bearings CR/CI or CI/CR	CR/CR	CI/CI	TS/TS
L.T.1	1	1	4	2
L.T.2	2	4	2	4
L.T.3	not run	3	1	3
L.T.4	not run	3	3	1

ARGENTINA OIL SEARCH

A delegation representing the municipality of Gaiman in Chubut, Argentina, presented a petition to the ministry of agriculture requesting that steps be taken to investigate the possibilities of the existence of petroleum deposits in that district. Drilling at Puerto Madryn, approximately 70 kilometers from Gaiman, failed to disclose petroleum deposits.

NEWS FOR PETROLEUM REFINERS

Shell Petroleum Corp. to Add 2,500 Men Within Week

Shell Petroleum Corp., immediately following the signing of the code for the petroleum industry by the President on August 19, issued from its general offices in St. Louis instructions to its branch offices to put the provisions of the petroleum industry code into effect.

It is estimated that approximately 2,500 new and additional employes will be on Shell's pay roll by the end of the week. Accurate estimates of the cost to the company are not available at this time.

It was explained that in addition to the estimated 2,500 new employes required under the code, the company, about a year ago, voluntarily co-operating in the "share-the-work-program" provided work for 1,800 employes in addition to their normal requirements at that time. This action lessens the number of new employes now required, but somewhat simplifies the task and hastens the complete compliance with the code program. These work-sharing employes have been trained in the duties of their respective positions, and now, under the code, will become full-time regular employes under the reduced time schedules now prescribed by the code.

The working hours in the general and district offices of the company several months ago were reduced to 40 hours per week. This is the same as the code requirement. All of the offices of the company in recent months have been operating on a five-day week basis. Many of those employed in the production, pipe line and refinery operations already are working 40 hours per week or less, and now, by provisions of the oil code, their weekly working time will be reduced to 36 hours.

Seeking to effect compliance with the code in line with the spirit of the recovery program, first consideration in placing new employes has been given to married former employes; second, to unmarried former employes; and where possible, all other positions have been filled with married men or heads of families.

In a circular letter addressed to employes, the company announced a policy of complete support for the administration and for the spirit and letter of the NRA in the following statement: "Our purpose is to transcend the letter of the new code and to lead the way in the interpretation of its real spirit and intent."

The company is one of the larger integrated units of the oil industry, owning crude oil production in the States of Kansas, Oklahoma, New Mexico, Texas, Louisiana and Michigan; operating five refineries (located at Houston, Tex.; New Orleans, La.; Arkansas City, Kans.; Wood River, Ill., and East Chicago, Ind), and its sales operations extend into 23 states in the midwestern and southern areas.

IMPROVE UNION REFINERY

Letting of a $160,000 contract to the Consolidated Steel Corp., Ltd., of Los Angeles, for steel to be used in making additions to and improvements in the Union Oil Co.'s refinery at Oleum, San Pablo Bay, California, was announced here today by R. E. Haylett, director of manufacturing. This is the first step in an expansion program, the total cost of which will be $750,000.

Mr. Haylett pointed out that during the past 18 months the Union Oil Co. had entered extensively into the manufacturing of specialty products, industrial, household and automotive, and that existing facilities were inadequate to meet present requirements.

DEEP ROCK PAY ROLL RAISED

Under the NRA schedule adopted by the Deep Rock Oil Corp., that company's pay roll at its Cushing, Okla., refinery will be raised $150,000 annually, according to W. E. Moody, general superintendent. The increase will make the pay roll for the coming year $503,000. The increase will be brought about, Mr. Moody said, through the employment of more men and the adjustment of working hours.

Will Attempt to Broaden Scope of Antiknock Test

Fuels containing alcohol and benzol will be included in a program for investigation regarding their antiknock value along with 100 per cent gasoline, according to a resolution adopted by the recent World Petroleum Congress.

Resolutions passed by the congress summarized its views as follows:

1. "That blends of iso-octane with n-heptane be adopted provisionally for providing fuels of standard antiknock quality.

2. "In view of the fact that the C.F.R. engine has been used by many countries for a short time only, the congress feels that it is premature to recommend the C.F.R. Motor Method as an international standard at the present time. Therefore, the congress recommends that intensive study be given to the problem of knock rating with the broadest possible international co-operation and scope, to the end that a method may be developed which may have world-wide acceptance. The congress recommends that the results obtained during this further study be transmitted to the Institution of Petroleum Technologists for analysis and correlation.

3. "That in the forthcoming series of tests envisaged by the C.F.R. committee in the United States, further to check the suitability of the Motor Method, contacts should be made with certain other countries interested in different types of fuel (e.g., alcohols, and blends rich in benzols) with a view to including these fuels in the test program."

Standard of Indiana Puts Many More Men on Payroll

CHICAGO, Sept. 5.—Service men in 3,600 stations owned and operated by the Standard Oil Co. (Indiana) went on the 48-hour week prescribed by the oil code beginning September 1. Officials estimated that more than 2,500 new attendants have been employed to equalize for the shortening of the working schedules of previous personnel. Expansion of the company's service station personnel will increase wage and salary payments by about $2,725,000 a year.

The company announced earlier that employes at its refineries and in offices and sales bulk plants had been placed on code schedules. Altogether the company is employing about 3,100 more men and will pay approximately $5,000,000 in additional wages and salaries annually in complying with the code. The Stanolind Pipe Line Co. and Stanolind Oil & Gas Co. are increasing their forces by 500 more and total wage payments by $700,000 a year.

DISTRIBUTE ASSETS

FORT WORTH, Tex., Sept. 4.—A receivership adjustment order has been issued by the court transferring the Bob Rose refinery at Luling to Cranfill & Reynolds. Leases in the Dunlap Field in Caldwell County near the refinery have been released by the court to Bob Rose.

Exports of Gasoline Show Large Increase in July

By CHARLES E. KERN

Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Sept. 2.—Gasoline and crude oil exports moved up in the month of July. Gasoline exports increased to 2,945,467 bbls. in bulk, an increase over June exports when the quantity was 2,067,577 bbls.

Illuminating oil in bulk totaled 756,462 bbls. and in containers 89,560 bbls. in July compared with only 270,242 bbls. in bulk and 78,614 bbls. in containers in the month of June.

Shipments of crude oil to France totaled 2,791,724 bbls. in July, an increase over June when the total was 1,271,917 bbls.; to Canada when July exports were 2,791,724 bbls. compared with 2,089,319 bbls. in June; to Japan which received 510,169 bbls. in July, a decrease compared with June when the total was 575,486 bbls. The Canaries received 79,707 bbls. of crude compared with 76,935 bbls. in June.

The United Kingdom took only 7,438 bbls. of gasoline in bulk in June, but jumped to 227,181 bbls. in July, with a negligible quantity in containers in each month.

Nearly all natural gasoline shipments in July went to the United Kingdom, 56,736 bbls., and Canada 83,453 bbls., compared with 118,989 bbls. to the United Kingdom and 86,032 bbls. to Canada in June.

Australia, which took 172,932 bbls. of gasoline, naphtha and other light products in bulk in July, showed a heavy decline from June when the quantity was 428,889 bbls.

Imports of crude and fuel oil increased in July compared with the month of May.

Crude imports in July totaled 3,410,732 bbls. compared with 2,206,169 bbls. in May.

Fuel oil, including topped petroleum imported in July, totaled 1,271,626 bbls. in July and 297,298 bbls. in May.

In July 1,561,748 bbls. of crude came from Venezuela, 946,242 bbls. from Mexico, 742,000 bbls. from Colombia and 160,742 bbls. from Ecuador. These imports compared with 1,325,545 bbls. from Colombia in May, 583,053 bbls. from Mexico, 299,000 bbls. from Colombia and none from Ecuador.

The fuel oil, including topped petroleum imported in July, was chiefly from the Netherland West Indies, 689,732 bbls. and Canada 30,159 bbls. compared with May when we imported 1,188,860 bbls. from the Netherland West Indies, 52,806 bbls. from Mexico and 29,960 bbls. from Canada.

FILES SUIT TO TEST TAX LAW

HELENA, Mont., Sept. 4.—The Standard Oil Co. (Indiana) has filed suit in district court here to test the constitutionality of the Montana chain store tax and to prevent enforcement of the tax as it affects the company's bulk and service stations. The suit names as defendants the Montana board of equalization, Attorney General Raymond T. Nagle, State Treasurer James J. Brett and State Auditor John J. Holmes. The company asserts that distribution of gasoline is not merchandising and that filling stations are not "stores" in the general acceptance of the term.

ADD SMALL PIPE LINE

The Simrall Pipe Line Co., subsidiary of the Roosevelt Refinery Co., of Mount Pleasant, has completed a new 4-inch auxiliary line from the Porter Field to Wheeler, a distance of about 3 miles.

MAY LAY PIPE LINE

CHATHAM, Ontario, Sept. 2.—Imperial Oil, Ltd., is reported bidding $1.05 a barrel at the wells for Cut Bank crude, for use in the Maple Leaf Petroleums, Ltd., refinery at Coutts, Alberta. Crude is trucked to the refinery at present, but if sufficient production is developed a 14-mile pipe line may be laid to deliver crude from the field to the present pipe line between the Red Coulee Field and the Coutts refineries.

Refinery in San Diego Is to Be Finished by Jan. 1

Plans have been announced for the erection of a 2,500-bbl. refinery in San Diego, Calif., by La Canada, Ltd., with construction to get under way within a few weeks. Ampco, Inc., of Dallas, Tex., has been awarded the construction contract, which calls for completion by January 1, 1934. La Canada's refinery, to be built on property of the Santa Fe Railroad, adjacent to the McCormick Lumber Co., wharf, will be the first in San Diego. Specifications call for a combination skimming and cracking unit in which a low-pressure recycling process is involved. B. C. Morrison, president of the company, states that Texas and Los Angeles men are providing the needed capital.

It is expected to start running approximately 2,000 bbls. of crude oil daily early in 1934 and present plans contemplate the distribution of gasoline principally in San Diego and Imperial Counties. In the event that the heavier fractions of crude are cracked to the coke stage, this by-product will be disposed of to smelting concerns, according to plans.

Officials of La Canada, Ltd., state that a three-year contract for crude oil has been made with producers in the northern part of the State. It is believed probable that this crude will come from Los Angeles Basin fields, where several independent refiners have adequate loading facilities.

The site of the plant in San Diego is at tidewater and consequently will involve no pipe line transportation. No great difficulty is foreseen in moving crude oil from Los Angeles to San Diego as marine facilities are available. Plans call for the erection of 224,000 bbls. of steel tankage, but the initial installation will be limited to approximately 75,000 bbls., with the rest to be erected later if conditions warrant.

Big West to Modernize Its Montana Refinery

Big West Oil Co. of Montana has just signed a license contract with Universal Oil Products Co. and will immediately start construction of a Dubbs cracking unit. The unit will be built by Ralph M. Parsons, consulting and contracting engineer, of Mount Vernon, Ohio.

Big West Oil Co. owns a refinery at Kevin, Mont., considerable crude in the Kevin Field, 35 miles of pipe line and filling stations. L. R. Hawley of Spokane is president and general manager of Big West Oil Co.

Installation of the Dubbs cracking unit is in line with the general expansion program of the refinery. The old shell stills are being replaced with a modern tubular furnace, a Dubbs gasoline reforming unit and a Dubbs cracking unit.

When completed, the crude processing equipment will have a capacity of 1,000 bbls. per day. For the present the cracking unit will handle 500 bbls. of crude oil per day. An increase in cracking plant throughput is expected and the unit has been designed to permit this.

TIMKEN TUBES OF TIMKEN STEEL

The Modern Combination for Modern Refinery Needs

Refinery tubes are no better than the steel from which they are made. That is why a steel manufacturer who is an alloy steel specialist can best produce the kind of steel required for refinery tube service.

Furthermore, a refinery tube manufacturer who produces his own steel is in position to assure the quality and uniformity necessary for extended refinery tube life.

The production of Timken Refinery Tubes involves (1) a broad first-hand knowledge of refinery operating conditions as they affect tubes. (2) the selection and manufacture of the proper grade of steel for each specific condition. (3) the fabrication of tubes of accurate size and section and uniform wall thickness.

Over all is a system of quality control of the utmost rigidity based on the extremely exacting quality standards of the world's largest producer of electric furnace steel.

It will pay you to consult Timken tube specialists regarding your future tube requirements.

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TIMKEN STEEL TUBES

NATURAL GASOLINE MANUFACTURE

Natural Gasoline Stocks Decrease in California

The California daily average natural gasoline production was virtually unchanged during July, amounting to 31,037 bbls. as compared to 31,057 bbls. during June, according to the California division of the Bureau of mines. Refinery utilization dropped from 26,607 bbls. to 22,000 bbls. daily but this was more than compensated for by an increase of 7,574 bbls. daily in shipments, which were negligible in June, amounting to only 520 bbls. daily. Stocks held by natural gasoline plant operators increased from 52,698 bbls. to 62,412 bbls. while stocks held by refiners decreased from 2,662,266 bbls. to 2,556,924 bbls., so that during July there was a net decrease in total stocks inside the territory of 95,628 bbls., or 3,085 bbls. daily, bringing stocks at the end of the month down to 2,619,336 bbls.

NATURAL GASOLINE STATISTICS FOR CALIFORNIA COVERING OPERATIONS DURING JULY AND JUNE

(Data in barrels daily)

Supply	Natural gasoline July	Natural gasoline June
Total production	31,442	31,436
Stocks trans.	(187)	292
Total	31,255	31,143
Deduct refinery requirements:		
Run to stills	3,398	2,914
Blended	18,602	21,689
Total	22,000	24,607
Gains (losses) unaccounted for—Net	(3,884)	5,183
Net supply available to market	5,371	1,353
Demand		
Domestic consumption inc. bunkers	362	407
Pacific foreign exports	1,452	.....
Atlantic foreign exports	6,642	.....
Total market demand	8,456	927
Surplus or (deficit)	(3,085)	426
Stocks		
Inside Pac. Coast. Terr.:		
At refineries	2,305,949	2,291,573
Elsewhere	313,387	323,391
Inside Pac. Coast Terr., last day	2,619,336	.....
Inside Pac. Coast Terr., first day	2,714,964	.....
Dec. during period	(95,628)	.....

OPERATING DATA FOR JULY

Number of plants operating	103
Daily capacity, cu. ft.	2,344,652,000

PRODUCTION BY FIELDS

	Gas treated (M.C.F.)	Natural gasoline produced (gallons)
Fullerton and Whittier	445,738	1,156,056
Midway	1,402,879	2,852,800
Huntington Beach	1,056,711	2,177,959
Kettleman Hills	6,574,603	8,677,707
Long Beach	2,984,857	7,556,905
Richfield	374,836	449,845
Santa Fe Springs	4,528,909	7,406,379
Seal Beach	439,965	906,466
Ventura Avenue	2,955,062	2,846,181
All other fields	2,988,037	6,366,292
Total	24,901,597	40,499,912

PRODUCTION BY METHODS

Type of plant—	Gas treated	Natural gasoline produced (gallons)	Gasoline recovery per M.C.F. gas treated
Oil absorption	24,762,177	40,275,478	1.626
Compressor	139,420	134,434	.964
Total	24,901,597	40,409,912	1.623
Finished gasoline produced at plants, bbls.			95

STOCKS

	Gallons	Barrels
Natural gasoline held by plant operators	2,621,266	62,412
Natural gasoline held by refineries	107,390,808	2,556,924
Total	110,012,114	2,619,336

LIQUEFIED PETROLEUM GASES

(Daily—barrels)

	July	June
Production	405	379
Sales	362	407

Many Difficulties of Operating Nature Remain for Solution Under Code

Although the words "natural gasoline" appear only once in the oil industry's code as the President signed it, there should be no doubt that all of the provisions of the code apply in manufacture and sale as forcefully as any other major branch. The reference to natural gasoline in the code follows: "The term American petroleum industry includes the production, refining and marketing of crude petroleum and its products; and is inclusive likewise of natural gasoline and the production of natural gas in conjunction with petroleum."

Specific mention is not made in the code to the hours of labor, wages, etc., as applied to natural gasoline while specific mention is made of these as applied to the production, refining, pipe line and clerical divisions.

It is assumed generally that natural gasoline falls within this classification and efforts have been made to make specific mention of it as a group so there can be no evasion of code practices on this point. The above assumption is strengthened by the fact that natural gasoline must fall into some group since the only other set of specified hours and scale of wages applies to the marketing division.

Few Who Qualify

With this as a basis all men working in natural gasoline plants exclusive of executives, supervisors and their immediate staff and clerks will work not more than 72 hours in any 14 consecutive days and not more than 16 hours in any two consecutive days. In the majority of plants there will be few who qualify for these exceptions as practically all of the men are operators. The superintendent and the clerk who compiles yield data and payrolls would be exempted in accordance with the general interpretations of the provisions. In those plants with a greater capacity than average there may be several foremen who would be exempt.

Obviously, it will be necessary to enter into the adoption and enforcement of the provisions with a spirit of fairness and not with the aim to "out-smart" the code. Some may question what constitutes an executive, a supervisor or a clerk, especially where there is such an overlapping of duties as is common in the natural gasoline industry, especially in the smaller plants.

Reference might be made to the definition of an executive as suggested in the blanket code written by Gen. Hugh S. Johnson, administrator. Here he exempts "employes in a managerial or executive capacity who now receive more than $35 per week." This would indicate that to be considered of sufficient executive importance for exemption the individual would need to be paid at least $35 per week or approximately $150 per month.

The oil code specifies that all other employes work not more than 40 hours per week and at rates of pay specified in accordance with the geographic location of the plants. These have been published previously but for convenience are repeated here in part:

52 Cents Per Hour

Plants in New York, Pennsylvania, Ohio, Indiana, Illinois, Michigan and California.

50 Cents Per Hour

Plants in Montana, Idaho, Wyoming, Colorado and New Mexico.

48 Cents Per Hour

Plants in Kansas, Arkansas, Louisiana, Oklahoma and Texas.

The oil code also provides that in plants located in Arkansas, Louisiana and Texas not more than 10 per cent, constituting common labor only, of the total number of employes in any plant or operation may be paid at not less than 80 per cent of this minimum rate. This was intended to provide for such negro labor as is often provided for in these states.

There was little thought given to the unusual conditions existing in any one of the branches of the industry when the code was being prepared and all timely efforts were extended to formulate a code that in general would be readily applicable and practical. The fact that a prolonged period of adverse prices has seriously crippled natural gasoline plant operations for a period of more than three years which in turn has necessitated longer working hours and curtailed forces in most plants leaves the industry to make major revisions in its present operations. In the case of small plants, the personnel often consists of but three or four men and there is a gross overlapping of duties. In many cases the plant operates almost automatically. The only time the force is really busy is when repairs are being made.

The superintendent often holds the responsibility of the operation of wells which supply the gas for the plant and he might spend only a few hours a day in actual contact with the men or facilities in the plant or field but he must be in the close proximity of the plant for the full 24 hours each day. The duties of the operators in these small plants approach a similar state of conditions.

These facts have helped to make the problem of arriving at a uniform classification of work and men at the various plants a difficult one. Committees have been at work for weeks trying to find an equitable basis on which all may agree but there remains many questions to be answered.

The problem was made doubly hard by the fact that over the past year or two, one group of companies took the position that it was better to share the work and reduce the pay of the individual while the other group maintained the same pay but required longer working hours. Now when the time comes to reduce the hours to those required in the code the first group finds it necessary to make only minor adjustments but the second group finds itself in need of a greatly increased force of men and also of reducing the pay of the individual operator some because of the much shorter hours he will work.

More specifically stated, the man who has been working 56 hours a week may have been receiving $125 a month. In another plant where the men have shared the work an operator having the same duties has worked only 36 hours a week

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No Reports Are Needed for Tracing Hot Oil Shipments

Since the proclamation of the President on July 11, in which he placed a ban upon hot oil shipments and provided for the reporting of shipments of crude and certain products in interstate movement, there have been numerous inquiries directed to the Natural Gasoline Association of America regarding the application of such reports to the shipping of natural gasoline.

The purpose of securing such reports is for tracing the origin of hot oil. Since the production of natural gasoline depends upon the volume of gas and the richness of the gas in any particular field and because these offer no clue as to the quality of crude produced it is obvious that a report of shipment would be of no value.

An inquiry on the subject was directed to the office of the solicitor, Department of the Interior, and the following reply was received by Ray Miller, association secretary:

"My dear Mr. Miller:

"In compliance with your request of several days ago, I beg to advise you that the regulations which have been issued by the Secretary of the Interior in regard to the prohibition of shipment in interstate commerce of petroleum and petroleum products produced or withdrawn from storage in violation of state law or regulation have been interpreted by the solicitor's office not to include within petroleum products natural gas gasoline.

"Yours very truly,

(Signed) "CHARLES FAHY,
"Acting Solicitor."

RECORD OF SAFETY WORK

That safety measures pay is not to be disputed in the routine operation of natural gasoline plants but a statement of the total reducion in the loss of accidental deaths in all industries and elsewhere, in which case the hazards are less than in the gasoline plant, should prove impressive when read by any operator.

The results have been outlined as follows: "In spite of the increase in high-powered machinery; in spite of the motor car, and in spite of the introduction of new and hazardous industrial processes, the national safety movement has succeeded in preventing 175,000 fatal accidents since its inception in 1913. There were 85.5 accidental deaths for each 100,000 population in 1913—a total of 82,460 deaths. In 1932 the death rate was only 70.5 per 100,000 population—amounting to 88,000 deaths. If the 1932 rate had been as high as in 1913 there would have been 106,723 fatalities, a saving of 18,723 lives in a single year. Such savings have occurred each year since 1913 except one—1917. The grand total is 175,250 lives saved."

RULES FOR WATER SHIPMENTS

The Interstate Commerce Commission has called a meeting for September 28 at 10 o'clock in Washington for the final discussion of regulations regarding the water shipment of all dangerous commodities. The announcement also states that "an informal conference will be held at the office of the commission in Washington, D. C., on September 26 and 27, beginning at 10 a. m., standard time, when opportunity will be afforded interested parties to discuss, and if possible, agree upon proposed requirements, which testimony at the hearing, and information obtained at the conference, indicate should be incorporated or modified before approval of the regulations is given by the commission."

Runnels County Semi-Wildcat Being Watched; Six Active Tests in Addis-Cowden Area

By L. E. BREDBERG
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Sept. 4.—B. C. Mann, Steve Currie and others have taken over the semiwildcat test being drilled by Joe Simmon and others on their H. E. Wade lease of 503 acres, in Subdivision No. 8, in the Norvell Travis Survey, Runnels County. This test is west of B. C. Mann's extension producer to the McMillan Pool brought in two weeks ago and has been making a steady production of around 400 bbls. of high gravity oil per day from a total depth of 2,534 feet. It will be watched with much interest and should it make a producer there will no doubt be much increased drilling activity for this pool, which so far has failed to receive much interest due to the fact that all wells completed in the field were small producers.

P. A. Johnson, of Dallas, has made location for another test to be drilled in Block 25, in the Mertzon Townsite, which will be carried on the West Texas drilling report as No. 1 City of Mertzon in Irion County. It is to be drilled west of the discovery opened by Mr. Johnson when he completed his No. 1 Tankersley, in the H. J. Voelker Survey, for an initial production of 160 bbls. pumping. This is the first location announced for this new shallow producing area, but it is expected more drilling will take place in this area and county, due to the shallow producing sand and high gravity of the oil found at around 1,300-1,400 feet.

There are six active tests in the Cowden-Addis area in Ector County, and verdict from three is expected during the week. Moran Drilling Co.'s test, on the R. W. Smith ranch in Section 12, Block 43, Township 1n, T.&P. Survey, is cleaning out to shoot after running 8¼-inch casing to 4,029 feet, total depth 4,370 feet. It is 2½ miles southeast of production and is expected to make a small producer. The other tests due for completion are being drilled by the Stanolind Oil & Gas Co. This company's No. 2 E. F. Cowden, located in Section 26, Block 43, Township 1n, T.&P. Survey, is now waiting on cement to set at 3,834 feet. No. 3 J. M. Cowden location in Section 34, Block 43, Township 2s, T.&P. Survey, has casing cemented at 3,967 feet and the two wells are now being rigged up with cable tools preparing to drill in.

Reagan County

Big Lake Oil Co.'s No. 11-C University, in Section 12, Block 2, University Survey, Reagan County, was completed the past week for an initial production of 830 bbls. in 23 hours at a total depth of 8,800 feet after topping the pay at 8,532 feet. Group No. 1 Oil Corp.'s No. 8-B University, also located in the Big Lake Field, Reagan County, which went dead August 8, was revived the past week with gas lift after plugging back from 8,695 feet to 8,679 feet, and is now estimated making 500 bbls. per day. This well was originally completed as one of the largest Ordovician producers in the field.

Ordovician Tests

Two other tests drilling in search of the Ordovician pay are now reaching interesting depths. In Upton County, Gulf Production Co.'s No. 103 McElroy, in Section 197, Block F, C.C.S.D.&R.G.N.G. Survey, is now drilling below 6,300 feet. In Pecos County, Humble Oil & Refining Co.'s No. 1 White Baker, west of the Yates Pool, in Section 44, Block 2, T.C.R.R. Survey, is drilling below 4,100 feet in lime.

Ward County

Ward County continues to be the most active county in West Texas, there being a total of 27 tests to be drilled, 16 of which are active at present. One of the best wells in this area for some time was completed the past week when S. A. Thompson completed his No. 3 W. D. Johnson, located in the Bennett area in Section 8, Block 34, H.&T.C. Survey, for an initial production of 456 bbls. of oil in 24 hours from pay topped at 2,310 feet, and bottomed at a total depth of 2,527 feet.

Ector County

Fred Turner is deepening his No. 1-A Addis located in the Harrison-Addis area, 5 miles west of the town of Odessa in Ector County. This well was originally completed for an initial production of 70 bbls. per day with a total depth of 4,113 feet, and is in Section 35, Block 45, Twp. 2s, T.&P. Survey. The recent completion of Humble Pipe Line Co.'s 6-inch line from this area gives this field its first outlet, and operators in the field are desirous of increasing their production as much as possible. A daily allowable of 200 bbls. is being taken by the pipe line from each well.

L. W. Wentz has staked location for a wildcat to be drilled 7 miles southeast of Penn Pool in Ector County, on the W. P. Edwards lease in Section 1, Block B-23, P.S.L. Survey. The test is to be drilled to 3,750 feet unless production is obtained.

Shell Petroleum Corp. and Gulf Production Co. are doing considerable leasing midway between the McCamey Pool and the old Sherk area in Upton County, presumably taken on the strength of Gulf Production Co.'s Ordovician test which is now drilling northwest of this area in Upton County.

Jones County

A group of operators will core drill a block of acreage east of Hamlin in northwest Jones County and a 4,000-foot test is proposed.

Wildcat Operations in West Texas

Week Ending September 2

COKE COUNTY

Company, well, farm name, section and block—	Remarks:
C. D. Hagerty et al's No. 1 Gaston, in Joseph Young Sur. No. 11	Drlg. 425 ft.

CONCHO COUNTY

Mintex Oil Co.'s No. 2 Waring Estate, 660 ft. from N line, 150 feet from W line SW ¼ Sec. 3120, A. T. Robinson Sur.	Cleaning out at 1,100 ft.

CRANE COUNTY

Loffland Bros.' No. 1 Tubbs, 1,334 ft. from N line, 1,320 ft. from W line, Sec. 9, Blk. 27-B, P.S.L. Sur.	Drlg. 2,230 ft.; elevation 2,540 ft.

ECTOR COUNTY

Broderick & Calvert et al's No. 1 E. F. Cowden, 2,240 ft. from E line, 330 ft. from S line of Sec. 25, Blk. 44, Twp. 2s, T.&P. Sur.	Drlg. 2,870 ft.; elevation 3,033 ft.
Gilpen et al's No. 1 B. H. Blakeney, 330 ft. from S and 440 ft. from E line of Sec. 32, Blk. 43, Twp. 1n, T.&P.R.R. Sur.	S.D. 250 ft. for repairs.
Landreth Production Co. & Llano Oil Co.'s No. 1 O. B. Holt, 660 ft. from S and W lines of N half of Sec. 20, P.S.L. Sur.	Drlg. 2,572 ft.
Moran's No. 1 R. W. Smith, NW cor. of Sec. 12, Blk. 43, Twp. 1n, T.&P.R.R. Sur.	S.D. T.D. 4,370 ft., 1,200 ft. of oil in hole, top pay 4,290-4,307 ft.
Stanolind Oil & Gas Co.'s No. 2 E. F. Cowden, 660 ft. from N and W lines of Sec. 26, Blk. 43, Twp. 2s, T.&P.R.R. Sur.	T.D. 3,825 ft.; standardizing.
Stanolind O. & G. Co.'s No. 3 J. M. Cowden, 1,980 ft. from N and E lines, Sec. 34, Blk. 43, Twp. 1n, T.&P.R.R. Sur.	T.D. 3,970 ft.; standardizing.
Fred Turner's No. 1-B F. V. Addis, 440 ft. from the E line and 330 ft. from S line of Sec. 35, T.&P.R.R. Sur., Blk. 43, Twp. 2s	Cellar.

FISHER COUNTY

Condor Pet. Co.'s No. 1 Holley, 1,170 ft. W and 660 ft. from N lines of E half, Sec. 6, Blk. R, W. E. Richardson Sur.	Moving in material.
Southern Oil Co.'s No. 1-A Pardue, 2,310 ft. from S and 990 ft. from E lines of Sec. 303, B.B.&C. Sur.	Drlg. 2,350 ft.; elevation 1,794 ft.

HOWARD COUNTY

Donnelly & Norman's No. 1 Magnolia Petroleum Co. (Bell), 330 ft. from N line and 330 ft. from W line of the N half of SW of Sec. 12, T.&P.R.R. Sur., Blk. 30, Twp. 1s	Drlg. 735 ft.
L. C. Harrison et al's No. 2 Texas Land & Mortgage Co., 2,310 ft. from E line and 330 ft. from the S line of Sec. 4, T.&P.R.R. Sur., Blk. 30, Twp. 1s	Location.
Joe Rusk et al's No. 2 G. M. Dodge Estate, 330 ft. from N line and 2,310 ft. from the E line of Sec. 9, H.&T.C.R.R. Sur., Blk. 30, Twp. 2s	Location.

IRION COUNTY

P. A. Johnson's No. 1 Townsite, Blk. 25, C. Schlote Sur., 150 ft. from S and W of Blk.	Drlg. 245 ft.

JONES COUNTY

Dyer's No. 1 Odom, 200 ft. from S and 170 ft. from W of N 320 acres, G. Zumwalt Sur.	S.D. for csg. 2,030 ft.
J. B. Kirk's No. 1 R. Gist, 150 ft. from N line, 150 ft. from E of SW cor. of survey	S.D. 50 ft.

LOVING COUNTY

R. L. Allen's No. 1 fee, 4,290 ft. from NE line, 330 ft. from SE line, Sec. 83, H.&T.C. Sur.	Location.
R. L. Allen's No. 2 fee, 4,290 ft. from NE line, 990 ft. from SE line, Sec. 83, Blk. 23, H.&T.C. Sur.	Location.
R. L. Allen's No. 3 fee, 4,290 ft. from NE line, 990 ft. from NW line, Sec. 83, Blk. 23, H.&T.C. Sur.	Location.
R. L. Allen's No. 4 fee, 4,290 ft. from NE line, 330 ft. from NW line, Sec. 83, Blk. 23, H.&T.C. Sur.	Location.
Eppenauer Drlg. Co.'s No. 1-C Allen, 330 ft. from NW line, 2,310 ft. from SW line, Sec. 90, Blk. 1, W.&NW Sur.	Location.
Eppenauer Drlg. Co.'s No. 1-A Victor, 330 ft. from SW and 338 ft. from SE of NW of N half Sec. 4, Blk. 2, W.&N.W. Sur.	Rigging up standard tools.

MITCHELL COUNTY

Neeley-Prater's No. 1 Morrison, 330 ft. from N line and 330 ft. from E line of Sec. 34, Blk. 23, T.&P.R.R. Sur.	Rigging up machine.

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COMPLETIONS IN WEST TEXAS

Howard County

M. D. Bryant and others' No. 1 Denman, top pay 2,615 feet, shot 480 quarts from 2,615-2,865 feet, initial production 100 bbls. in 24 hours' pumping, total depth 2,865 feet.

Regan County

Big Lake Oil Co.'s No. 11-C University, top pay 8,352 feet, initial production 830 bbls. in 23 hours, total depth 8,800 feet.

Ward County

S. A. Thompson's No. 3 W. D. Johnson, top pay 2,310 feet, initial production 324 bbls. in 24 hours, total depth 2,527 feet.

WICHITA FALLS DISTRICT

Daily average crude oil movement from the Wichita Falls district for the week just ended was 51,254 bbls., an increase of 84 bbls. over the previous week.

Twelve locations and twenty-three completions were registered in this district for the past week.

The Continental Oil Co. has started up operations in its old line from Jack County to its main line in Young County. This line has been shut down for two and one-half years.

Pipe Line Rate Hearing Before Texas Commission

AUSTIN, Tex., Sept. 4.—Testimony on the proposal of the Texas Railroad Commission to reduce the transportation rates of oil pipe line companies in Texas 20 to 25 per cent was given at the commission's hearing Thursday.

Under the schedules proposed, rates into Fort Worth and Dallas from the following fields would be: East Texas, 25 cents a barrel; North and West Central Texas, 25 cents, and Panhandle area, 32½ cents. The proposed rate for East Texas crude would be 25 cents to Houston, Texas City, Beaumont and Port Arthur.

Protest was filed with the Railroad Commission by Missouri Pacific and Texas & Pacific Railroads against any reduction in pipe line rates. The statement declared that in oil transportation between points in Texas the railroads are in competition with common carrier pipe lines, and at present find it possible to maintain rates for transportation by rail which enable them to handle a substantial volume of crude oil in competition with pipe lines. Any pipe line rate cut, they said, would tend to make it impossible for them to participate in the oil traffic on a basis that would yield them any net revenues after defraying the out of pocket cost of handling the traffic.

It was estimated that the proposed schedule would bring reductions in gross receipts approximating $20,000,000 annually.

The proposed schedules are based on pipe line systems in the State as a whole, doing away with differentials that now exist. Representatives of the major pipe line companies declared that unless the commission makes the rates inflexible some companies may establish tariffs below the maximum rates, causing discrimination. It was shown that, while low rates are in effect by certain pipe lines transporting oil from East Texas, practically all of such oil is owned by affiliated companies and is not common carrier oil.

OIL COMPANIES are now selling Ethyl Gasoline at only 2c a gallon over the price of regular gasoline.

To the average car owner this means an added expenditure of only about sixteen cents a week to buy Ethyl instead of regular gasoline. *And this statement overlooks the proved economies of Ethyl and of high compression engines designed for Ethyl!*

What is the reward—to car manufacturer and car owner—offered for this 16c a week investment? Improvements from the higher compression ratios permissible with Ethyl Gasoline include:

(*1.*) ***More power and speed*** — The increased fuel efficiency of higher compression results directly in greater horsepower throughout the engine speed range, with no increase in fuel consumption.

(*2.*) ***Faster acceleration*** — This gain in horsepower with no increase in car weight results in substantially improved accelerating ability.

(*3.*) ***Better hill-climbing ability*** — The gain in power permits greater speed in climbing any given hill and often results in gaining the summit of the hill without shifting to the lower gear necessary if the car were of lower compression ratio.

(*4.*) ***Less heat to cooling water*** — Increased fuel efficiency offers needed relief to cooling systems, instead of a further increase in load from the more powerful engine of 1934 models.

(*5.*) ***Cooler exhaust gases*** — The exhaust gases of a high compression engine are cooler at any given r.p.m. than are those of the same engine with a lower compression ratio.

(*6.*) ***Lower extreme bearing loads*** — At those speeds which produce bearing strains (high speeds), the forces of inertia greatly exceed the opposing forces of gas pressure. The *increased* gas pressures of higher compression engines therefore more nearly balance the forces of inertia than do smaller gas pressures. In this manner, higher compression actually *lowers* extreme bearing pressures.

And remember:

THE AVERAGE CAR OWNER USES ONLY ABOUT 8 GALLONS OF MOTOR FUEL A WEEK

MANY manufacturers will take advantage of the recent improvement in the anti-knock value of regular-priced gasoline to get these high compression rewards to some extent.

But a car designed to the limits of regular-priced gasoline will still, of course, fall short of the competitive superiority of a similar car designed to take full advantage of Ethyl Gasoline.

In building your 1934 car, therefore, you may either increase compression to the permissible limit of present-day regular-priced fuel—thus maintaining competitive performance comparison with other cars designed for regular gasoline—or take advantage of Ethyl Gasoline, at a premium of only 2c a gallon, to make a greater compression increase and give your car truly outstanding performance.

In addition to permitting performance improvements through increased compression, Ethyl Gasoline insures easy starting, freedom from vapor lock, and safe minimums for gum and sulphur contents. When it is recommended that cars be run on Ethyl Gasoline, car owners are automatically discouraged from using the *lowest price* gasoline and instead are encouraged to use a fuel that is satisfactory in *every* respect, thus insuring continued satisfaction from their cars.

Wherever—and by whatever oil company—it is sold, Ethyl Gasoline is required to meet definite specifications for every needed quality of motor fuel. It is doubly tested before and after Ethyl fluid is added, for anti-knock quality, distillation characteristics, gum, and sulphur contents. After it is placed in retail pumps for sale to the public, inspectors gather samples for retesting to make sure that Ethyl users always get full quality.

Design your 1934 cars for Ethyl Gasoline and thereby get the competitive superiority you want. Recommend that Ethyl always be used and thereby aid every customer to get constant, maximum satisfaction from the car he buys.

Engineers of the Ethyl Gasoline Corporation will be glad to cooperate with you in getting maximum benefit from compression increases. Ethyl Gasoline Corporation, New York City.

SHELL

Law Making Proration Violation Felony Helping to Tighten Enforcement in East Texas Field

By L. E. BREDBERG

DALLAS, Tex., Sept. 5.—The new felony bill making violations of the Railroad Commission's proration orders a felony punishable by fine and imprisonment went into effect September 1 thereby tightening proration in East Texas, and giving the commission still further powers with which to hold production under control in that and other fields in the State.

A group of refiners is reported planning institution of a suit to test the new law, but as producers and refiners have had but little luck in recent attacks on proration orders in this field, such plans may fall through. The state law provides that anyone may report violations of the proration laws to the district attorney. Heretofore the Railroad Commission's field men have been making investigations and reporting violations. With other producers and men in the field notifying the district attorney or attorney general's department of infractions of proration laws a better watch may be kept on such illegal movements than in the past.

About 40 field men of the commission have been discharged, leaving but a skeleton force to regulate production and pipe line runs from the vast area in which there are 10,500 wells. But with Federal investigators in the field a smaller force of the commission, working with the higher authorities, may be able to handle the situation. The mere fact that a group of unknown Federal investigators is working in the field has been sufficient to control many who heretofore have not abided by proration laws. Putting the new felony law into effect will also act as a deterrent to those who have scorned the commission's orders.

Back Allowable Held

The commission has extended its order preventing the production of back allowable oil for another 30 days. It had contemplated allowing some oil to be produced and run as back allowable oil, granting claims where the operator was unable, through no fault of his own, either to run or sell; and also granting claims from operators who accepted the commission's permit to close in their wells during the period when oil was selling for 10 cents per barrel. But the later decision prevented another bad situation such as appeared about three months ago when the commission granted permits for the production of so-called back allowable oil. The commission was swamped with applications to produce back allowable, and many operators who obtained such permits took advantage of them and ran more oil than back allowable permits granted. Field men of the commission have taken exception to the granting of such permits and allowing the production of such oil. With the Federal Government curtailing production the addition of back allowable oil to daily limits would only cause more trouble to those trying to regulate the industry.

Back allowable claims amount to nearly 9,300,000 bbls., according to applications filed between the time of March 15 and August 11, at which time the commission stopped receiving claims. Nearly 2,000,000 bbls. of this amount was allowed by the commission to be run, a part of the claims being denied some operators. The Kilgore office has given approval to over 300,000 bbls., but so far the three commissioners have not granted permission for this amount, and probably will not until back allowable oil can be run, if ever.

New Order on Drilling

A new order of the commission which states that "no permits to drill an oil well shall be allowed until notice of hearing has been given by the commission" may have telling effect, especially with reference to small tracts which have had more than their share of wells already.

The order states: "In cases where all offset or adjoining lease owners waive protests in writing and it clearly appears that such well should be granted as an offset well to prevent drainage, the permit may be granted without a hearing, provided that to meet drainage or direct equidistant offsets the commission may at its discretion grant permits without notice and hearing or waivers." If this method of granting permits had been instituted many months ago perhaps less drilling would have taken place in the field, especially the intense drilling of the many small tracts in the field, which received more than their share of wells, causing offset lease owners to drill more wells than they perhaps otherwise would have drilled, especially at a time when the oil was selling so low that excessive drilling only caused losses to the producers.

Drilling Rushed

Fifty-six more wells were completed in the field this week, operators and companies alike rushing their drilling to complete a large number of wells and drill locations before the oil code became effective and before they had to go before a general hearing of the commission or get special dispensation to obtain permits in the future. Promising higher crude prices is also an incentive to spur drilling at this time.

Companies have been increasing their field forces in East Texas during the past two weeks, taking care of many of the unemployed production and pipe line men. The Sinclair Prairie Oil Co. added 50 per cent more men in its construction department and 33⅓ per cent more men in the production department. Four drilling crews are now used by the company. The majority of men being put to work by the companies are roustabouts, switchers, pumpers, drillers, pipe line station men, telephone and telegraph men, while a few more office men are also being employed.

Daily average production in the field for the week ending August 31 was 609,480 bbls., while distribution tallied 637,315 bbls. per day, 27,835 bbls. per day being run from storage. Daily refinery runs averaged 64,080 bbls., while main pipe lines transported 572,400 bbls. from the district.

Wildcatting Activities

The two Leon County tests, one of the Shell Petroleum Corp. and others and the other of Bateman Drilling Co. and others, both wildcats, are still fishing.

The most interesting test in the East Texas district at the present, Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 1 Monning (Long Lake plantation) test on a large block assembled by the two companies, is preparing to take a core at 4,874 feet. This test is an extreme wildcat in Anderson County. Elevation is 227 feet. Top of the Austin chalk has been reported at various depths, 4,598 feet, 4,612 feet and 4,623 feet. Reports this week stated that the Stanolind Oil & Gas Co. purchased 750 acres of leases and 900 acres of royalty out of the large block, for a total consideration of $100,000.

Formations in the test have been picked up at the following depths: Top of Midway, —2,253 feet; top of Navarro, —2,667 feet; top of Pecan Gap chalk at —3,313 feet; base of Pecan Gap, —3,427 feet; top of Gover chalk, —4,082 feet; and top of Austin as mentioned above.

American Liberty Oil Co. and others' No. 1 J. H. Norton's 109-acre tract in the J. C. Morris Survey, east central Henderson County, is drilling below 1,570 feet and is to be a Woodbine sand test. It is on a 3,600-acre block adjacent to a core drilled block held by the Shell Petroleum Corp.

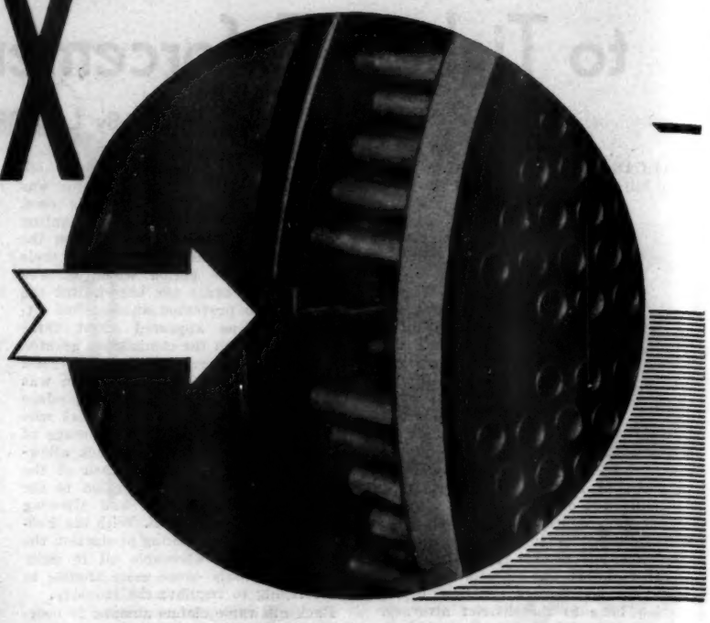
Roeser & Pendleton, Inc.'s No. 1 L. R. Billett, in the Cecil Bobo Survey, Henderson County, was spudded on September 1 and is now drilling. Syam Oil Co.'s No. 1 H. M. Keipp, located on a 563-acre block in the J. Richardson Survey, across the line from the above mentioned well, Navarro County, was reported to have topped broken Austin chalk at 3,155 feet and hard Austin at 3,190 feet. Surface elevation is around 315 feet. Pecan Gap chalk was logged from 2,155-2,238 feet with the base reported at 2,312 feet.

GAS IN MACON COUNTY, TENN.

Gas was discovered near Westmoreland, Macon County, Tennessee, on the R. B. Freeman farm on August 26. The well is reported to the Tennessee Division of Geology as making over 1,000,000 feet per day. Production is from the upper Sunnybrook sand (Ordovician system) reached at a depth of 191 feet.

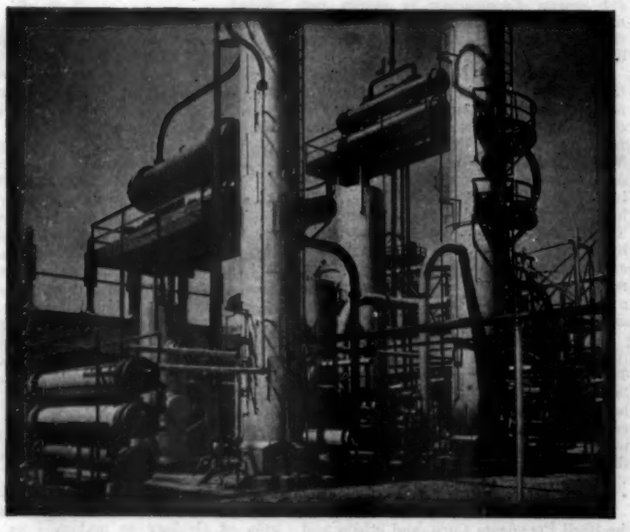
The Southern section of the East Texas Field, the Joinerville area of Rusk County

LAMIFLEX



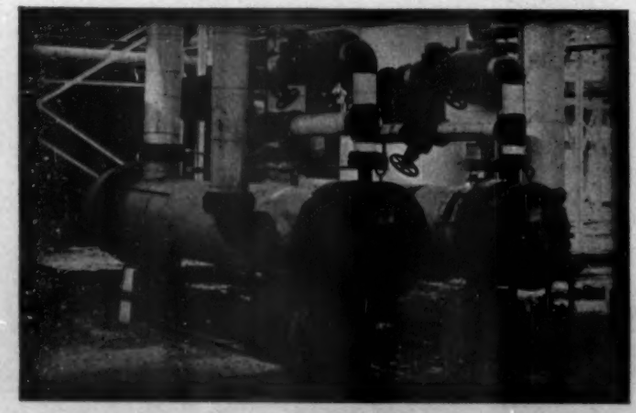
Right—*Close-up view of tube bundle in shell, showing the Lamiflex Seal on the longitudinal baffle.*

On Opposite Page—*Cross-section drawing of the Lamiflex Seal showing method of supporting the flexible sealing strips.*

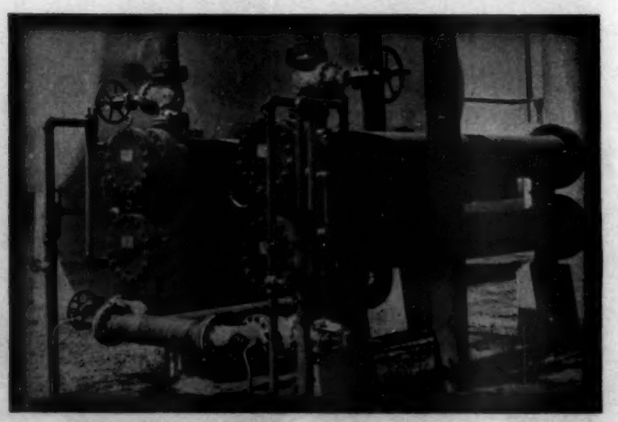


Westinghouse Heat Exchangers in the vapor recovery plant of the Globe Oil & Refining Company at McPherson, Kansas.

Westinghouse Stabilizer Bottoms Exchangers installed in the new Globe Refinery

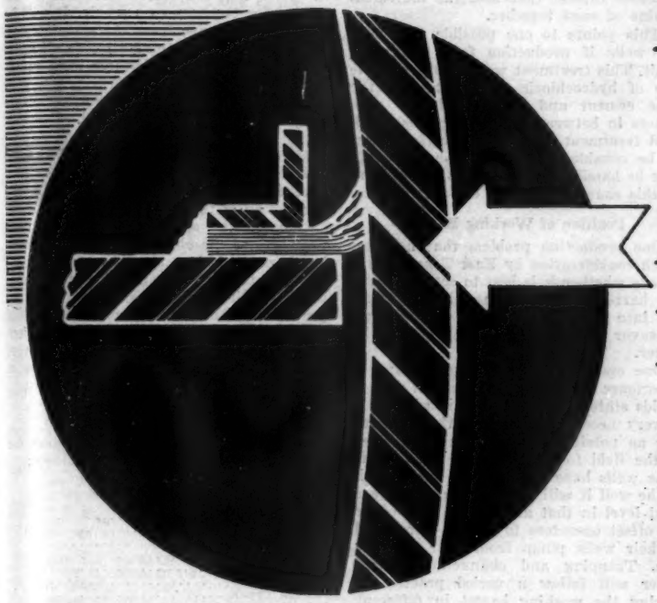


This view shows Westinghouse Reboilers used in the New Globe Refinery.



Four 250-sq.-ft. Westinghouse Compressor Intercoolers in the new Globe Refinery.

—the Self-Sealing Baffle Edge



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WESTINGHOUSE announces the LAMIFLEX Seal, a patented, self-sealing edge for removable longitudinal baffles. This important improvement assures true counter-current flow and maximum heat transfer in two-pass shell exchangers.

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Modern Cleanout Methods Will Improve East Texas

(Continued from Page 15)

to the formation of bentonite. Thus it seems improbable that the alteration of volcanic glass to bentonite clay was brought about by unusual chemical conditions. On the other hand, it seems to have been the result of hydration and solution of an unstable glass that was perhaps more or less aided by the presence of chlorides and bicarbonates, the latter probably in very weak concentration."

East Texas Conditions

In the above quotation the authors are referring to Woodbine section examined at its outcrop. In East Texas this formation is buried more than 3,500 feet beneath the surface and the only samples secured for examination have been cores from the drilled holes.

Minor and Hanna in their paper on "East Texas Oil Field," published in the July issue of A.A.P.G. Bulletin, show several photographs of cores from East Texas wells and discuss them under the heading "Lithological Characteristics." They report shales, silts, and sands and conglomerates. Under the last-named paragraph they state: "Unfortunately, time has not been available for detailed petrographical study of the silty material of these cores. Such silty sands are usually referred to as ashy or trashy sands. In part, the material may be altered ash, although in certain instances it is of secondary origin, possibly transported and precipitated from circulating waters which have been in contact with altering ash beds. When the silt is removed from these silty sands by seiving, the more sandy material consists of subangular grains of various sizes. The individual grains are predominantly of quarts. Feldspars are not uncommon. Pink orthoclase is generally more abundant in the lenses in which material as large as small gravel is present. In the samples examined there has been only a small proportion of heavy minerals.

"It has been interesting to note the variation of oil saturation in respect to silt percentage. One core had a porosity of 17.5 per cent, yet showed no oil in any of the common solvents. This might be due to presence of water or saturation with gas. The former appears to be the fact, since a sufficient amount of water circulated through this sand after deposition to allow precipitation of siliceous cement, and it is commonly stated that all gas within this field was in solution at the time the field was discovered. Although this silty sand has a porosity higher than other saturated sands, the water was not displaced by oil. When the core was dried and placed in East Texas crude, it very quickly became saturated with oil. Differential saturation in silty sand cores has been observed in many other East Texas cores."

Cementation

Quoting further from Minor and Hana's paper under the above subtitle we find:

"Secondary cementation is a dominant characteristic of the silts, sands, and conglomerates of this group of beds. No sample has been examined by the writers from the East Texas Field in which secondary siliceous cement was not present. Even those cores which were found as loose sand in the core barrel contain secondary cement. Many of the grains have new faces developed. One reason the more permeable sands from an ideal reservoir is that the individual grains are held rigid by the small amount of this siliceous cement. The loose sand cores are not due to the sand in place being loose, but rather to the method of coring.

"Secondary calcareous cementation is common within the silts, sands, and conglomerates of this group of beds. Many cores have been examined in which no porosity could be found. The cement was preponderantly calcium carbonate. It was interesting to note that the precipitation of this calcareous cement occurred after siliceous cement since the sand grains were firmly held together by siliceous cement after calcareous cement was removed with hydrochloric acid. Many wells have been finished without even setting perforated pipe. As far as the writers are aware the cementation has been sufficient to prevent these wells from making sand."

Effect of Ash in Formation

This question of whether bentonite is present has been discussed at some length because there are some who endeavor to explain the absence of appreciable water encroachment in East Texas by assuming the volcanic ash to be bentonite in form and that the water coming in contact with it creates a plastic slime which seals the sand pores and prevents a further advance of the fluid.

As bentonite occurs in a formation it has some percentage of water included. It is semiplastic but it is very evident that fresh water does not cause it to swell or run because this fluid has been used in washing in the wells and if bentonite action was going to develop it certainly should have shown some indications of doing so when the wells were full of this wash water.

It therefore seems that the East Texas operators will have little to fear from swelling of materials in the formations even though it seems reasonable to assume that fresh water will enter the producing horizon through poorly cased holes.

It is a well known fact that a large number of wells in this field have been cased with what would commonly be considered "junk casing." Not only has poor material been used but haste in running the string has been practiced at many wells and only a limited amount of cement has been placed behind the casing.

As rotary mud has been left in holes where only a small amount of cement has been used this mud is now tending to protect the holes against free fresh water movement from the upper formations. As the fluid level is lowered, however, it is anticipated that this casing will fail because the pressure inside will be relieved and it is quite probable that this fresh water will then break through and enter the producing formation.

Salt water will also enter the formation at the producing level in time and the intermingling of fresh and salt water will set up conditions that will cause accelerated corrosion. As such a condition will be first encountered in wells with poor casing it will constitute a double hazard because this poor pipe will not be able to withstand external pressures of any appreciable amount and there will be pitted spots already present in which the corrosion will start and continue.

Sand Troubles

It has been reported that some East Texas wells making salt water have shown an increase in the quantity of sand entering the hole. This condition has not become general enough up to this time to furnish sufficient data upon which to form any definite opinion as to whether sand will cause trouble in pumping wells later. If the salt or fresh water passing through the sand will tend to dissolve the cementing material from between sand grains it is possible that appreciable quantities of loose sand may enter the well.

However, Minor and Hanna point out that even though the calcareous cement had been removed by dissolving it in hydrochloric acid there still remained the siliceous cement that held the individual grains of sand together.

This points to one possible treatment for wells if production falls to a low limit. This treatment would consist of the use of hydrochloric acid to remove the lime cement and open up larger pore spaces in between the sand grains. Such acid treatment will be a special problem to be considered later and should properly be handled by companies specializing in this character of well cleaning service.

Position of Working Barrel

One production problem that has had much consideration by East Texas operators is whether it is best to set the working barrel low and pump all fluid coming into the hole or to set it high and endeavor to skim the oil from above the water.

One operator with a large amount of experience in Powell, Mexia and Wortham Fields states that he is convinced that it is very necessary to pump the wells as low as possible, providing all operators in the field follow the same practice. If some wells have the working barrel high in the well it will tend to create a higher fluid level in that area which will cause the offset operators to handle more fluid if their wells pump from near the bottom. Trapping and channeling of the water will follow a varied practice of placing the working barrel in different wells and ultimately much oil will be lost.

The recommendation of this operator is that so long as the water entering the wells can be handled by pumping then all working barrels should be placed near the bottom of the wells. When the amount of water made by the wells cannot be handled by pumping then the tubing and working barrel should be raised in all wells gradually allowing the water to cover the sand. This will have the effect of thoroughly washing the sand free of oil and will insure high total recovery.

It is not recommended that at any time the tubing be raised so high as to create a high level in the field. Rather the working barrel should always be submerged in the water and part of this water removed with the oil thus insuring the movement of water within the sand. This water movement will tend to free the sand of all entrapped oil.

From experience in other Woodbine sand fields it does seem apparent that some uniformity of position should be maintained for the working barrel, at least by areas, if not applicable to the field as a whole. By keeping the working barrel submerged with water at all times it seems that the best results can be obtained for the area as a whole. It will be necessary to experiment to some extent, but the best ultimate results for all operators will be obtained if there is co-operation based on some uniform practice in this, as well as other production problems, in the East Texas Field.

BIGHORN TRIPLES ITS OUTPUT

BILLINGS, Mont., Sept. 4.—The new three-tower reforming still, tripling the production of the Bighorn Oil & Refining Co., has begun operation. The still takes the place of the old type shell still which has been used since the refinery was constructed three years ago. The unit, costing approximately $30,000, has been under construction since April. According to Paul Stock, president, and Jack Everett, secretary-treasurer, operation of the unit means an immediate increase in the company's pay roll of 70 per cent.

ROCKY MOUNTAIN RUNS

Estimated daily average production for the week ending September 2 follows:

	Bbls.
WYOMING	
Salt Creek	17,110
Big Muddy	1,720
Badger Basin	40
Byron-Garland	1,060
Byron-East	40
Dallas Derby	490
Dutton Creek	70
Elk Basin	540
Ferris	10
Frannie	120
Grass Creek	shut in
Greybull	0
Hamilton Dome	850
Hudson	230
LaBarge	1,000
Lance Creek	220
Lost Soldier	1,850
Mule Creek	shut in
Midway	60
Notches	shut in
Oregon Basin	1,070
Osage	450
Pilot Butte	30
Rex Lake	20
Rock River	1,190
South Casper	680
Poison Spider	70
Teapot	20
Warm Springs	shut in
Total	28,850
MONTANA	
Buckley-Border	390
Cat Creek	750
Cut Bank	920
Dry Creek	280
Kevin-Sunburst	3,660
Lake Basin	50
Pondera	770
Total	6,820
COLORADO	
Florence	210
Fort Collins and Wellington	590
Iles Dome	550
Moffat	600
Orchard	120
Rangely	90
Tow Creek	230
Total	2,390
NEW MEXICO	
Artesia	590
Cooper area	70
Empire area	0
Eunice area	930
Getty Pool	0
Hobbs	33,530
Hogback	220
Hospah	shut in
Jal	1,630
Lea area	2,180
Jackson	960
Maljamar	230
Rattlesnake	350
Table Mesa	80
Total	40,770
Total all fields	78,830
Total previous week	78,190
Difference	640

The Oil Man's Calendar

September

10-15—Chicago, American Chemical Society, Stevens Hotel.

20-22—Atlantic City, N. J., National Petroleum Association, thirty-first annual meeting, Traymore Hotel.

25—Chicago, Natural Gas Department, American Gas Association.

25-29—Chicago, International gas conference and fifteenth annual convention, American Gas Association, Stevens Hotel.

27-28—Akron, Ohio, Ohio Petroleum Marketers Association, Hotel Mayflower.

October

Louisville, Ky., Kentucky Petroleum Marketers Association.

24-26—Chicago, Ill., fourteenth annual meeting, American Petroleum Institute.

Kansas City, Mo., Big Four State Independent Oil Jobbers Association.

Tulsa, Mid-Continent Oil and Gas Association.

November

Los Angeles, Calif., American Association Petroleum Geologists, Pacific Section.

December

4—New York, fourteenth Exposition of Chemical Industries, Grand Central Palace.

Great Falls, Mont., Rocky Mountain Oil and Gas Association.

Roanoke, Va., American Institute of Chemical Engineers.

New York, American Society of Mechanical Engineers, National Aeronautic Meeting.

1934

January

18—Oklahoma City, Okla., Okla-Petroleum Marketers Association.

25-26—Sioux Falls, S. Dak., South Dakota Independent Oil Dealers Association.

February

6-7—Des Moines, Iowa, Iowa Petroleum Association.

13-15—Columbus, Ohio, Ohio Petroleum Marketers Association.

April

19-20—Cleveland, Ohio, National Petroleum Association.

Wildcat Operations in West Texas

(Continued from Page 37)

PECOS COUNTY

Humble Oil & Refining Co.'s No. 1 White, Baker, 1,320 ft. from N and E lines of Sec. 44, Blk. Z, T.C. Sur.... Drlg. 4,155 ft.; elevation 2,715 ft.

Mid-Kansas O. & G. Co.'s No. 18 Smith-Taylor, 1,296 ft. from S line, 1,390 ft. from W line, Sec. 33, G. C.&S.F. Sur., Blk. 194 ..... Location.

Mid-Kansas Oil & Gas Co.'s No. 20 Smith-Taylor, 700 ft. from S line and 330 ft. from W line of NW cor. S half of Fred Turner, Jr., Sur., but located in Sec. 32, Blk. 194, G.C.&S.F. Sur. ..... Drlg. 735 ft.

Mid-Kansas Oil & Gas Co.'s No. 21 Smith-Taylor, 1,700 ft. from S line and 275 ft. W of northerly NW cor. of Fred Turner, Jr., Sur., but located in Sec. 33, Blk. 194, G.C.&S.F. Sur. ..... Rigging up machine.

Mid-Kansas Oil & Gas Co.'s No. 22 Smith-Taylor, 250 f.t from S line and 324 ft. from W line of NW cor. of Fred Turner, Jr., Sur. No. 2, but located in Sec. 33, Blk. 194, G.C.&S.F. Sur. ..... Location.

Mid-Kansas Oil & Gas Co.'s No. 33-A I. G. Yates, 205 ft. from N line and 250 ft. from W line of NW cor. of Fred Turner, Jr., Sur. No. 3, but located in I. G. Yates Sur., A-8195 ..... Location.

Mid-Kansas Oil & Gas Co.'s No. 34-A I. G. Yates, 150 ft. from N line and 250 ft. from E line of NW cor. of Fred Turner, Jr., Sur. No. 4, but located in I. G. Yates Sur., A-8195. ..... S.D. 216 ft.

Mid-Kansas Oil & Gas Co.'s No. 35-A, 250 ft. from N line and 324 ft. from E line of NW cor. of Fred Turner, Jr., Sur. No. 2, but located in I. G. Yates Sur., A-8195. ..... Location.

Sproles & O'Neal's (rec.) No. 2-A Fred Turner, Jr., 196 ft. from N line, 300 ft. from W line of Fred Turner, Jr., Sur. No. 1 ..... Location.

Sproles & O'Neal's (rec.) No. 4-A Fred Turner, Jr., 1,640 ft. from N line, 250 ft. from W line of Fred Turner, Jr., Sur. No. 1 ..... Drlg. 392 ft.

Sproles & O'Neal's (rec.) No. 5-A Fred Turner, Jr., 250 ft. from N, 240 ft. from W of C SE cor. of Fred Turner, Jr., Sur. No. 1 ..... Location.

Sproles & O'Neal's No. 6-A Fred Turner, Jr., 1,940 ft. from S line, 300 ft. from W line of Fred Turner Sur. No. 1 ..... Drlg. 815 ft.

Sproles & O'Neal's No. 7-A Fred Turner, 280 ft. from S line, 250 ft. from W line of Fred Turner, Jr., Sur. No. 1 ..... Location.

Sproles & O'Neal's No. 8-A Fred Turner, Jr., 560 ft. from S line, 550 ft. from E line of Fred Turner Jr., Sur. ..... Location.

Sproles & O'Neal's No. 1-B Fred Turner, Jr., 350 ft. from N line, 308 ft. from E line of Fred Turner, Jr., Sur. ..... Rigging up machine.

Sproles & O'Neal's No. 2-B Fred Turner, Jr., 350 ft. from N line, 305 ft. from W line of Fred Turner, Jr., Sur. ..... Location.

Sproles & O'Neal's No. 3-B Fred Turner, Jr., 356 ft. from S line, 250 ft. from W line of Fred Turner, Jr., Sur. ..... Location.

Sproles & O'Neal's No. 4-B Fred Turner, Jr., 717 ft. from S line, 250 ft. from E line of Fred Turner, Jr., Sur. No. 2 ..... Location.

Sproles & O'Neal's No. 1-C Fred Turner, 250 ft. from N line, 250 ft. from W line of Fred Turner, Jr., Sur. ..... Location.

Sproles & O'Neal's No. 2-C Fred Turner, Jr., 205 ft. from N line, 305 ft. from E line of Fred Turner, Jr., Sur. No. 3 ..... Location.

Sproles & O'Neal's No. 1-D Fred Turner, Jr., 150 ft. from N line, 250 ft. from W line of Fred Turner Sur. No. 41 ..... Drlg. 510 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 12-C University, 928 ft. from N, 740 ft. from E line of Sec. 12, Blk. 3, University land ..... Drlg. 5,580 ft.

Continental Oil Co.'s No. 9-B University, 1,900 ft. from S line, 1,805 ft. W of E line of Sec. 39, Blk. 9, University Land Sur. ..... Drlg. 6,045 ft.

G. R. Snider, Trustee's No. 1 D. E. Hughes, 1,248 ft. from E and 990 ft. S of the NW cor. of Sec. 8, G.C.&S.F. Sur. ..... Drlg. 2,330 ft.; elevation 2,590 ft.

REEVES COUNTY

Freels et al's No. 1 J. B. Greeman, 330 ft. from NE and 2,310 ft. from S line of Sec. 21, Blk. 3, H.&G.N. Sur... Drlg. 1,523 ft.

RUNNELS COUNTY

Golden Pet. Co.'s No. 2 McMillan, Subdv. 22, N. Travis Sur. ..... Cellar.

B. C. Mann et al's No. 1 H. E. Wade, 150 ft. from S and 1,650 ft. from W line, Subdv. No. 8, Norvel Travis Sur. No. 533 ..... T.D. 135 ft.

TAYLOR COUNTY

Crissman et al's No. 1 City of Abilene, 1,300 ft. from N and 1,350 ft. from E lines of Sec. 44, Bal Sur. ..... Rigging up cable tools.

UPTON COUNTY

Gulf Prod. Co.'s No. 103 McElroy, 1,980 ft. from S and 660 ft. from W. Sec. 197, Blk. F, C.C.S.D.&R.G.N.G.... Drlg. 6,306 ft.; elevation 2,633 ft.

WARD COUNTY

Abell Brothers et al's No. 1 S. S. Owen et al, 330 ft. from NW line and 2,310 ft. from SW line of Sec. 15, H.&T.C. Sur., Blk. 5 ..... Drlg. 788 ft.

Abell Brothers' No. 1 Archenhold et al, 2,310 ft. from NE line and 330 ft. from SE line of Sec. 23, H.&T.C. Sur., Blk. 5 ..... Rigged up spudder.

Atlantic Oil & Prod. Co.'s No. 3 W. D. Johnson, 1,650 ft. from NW line of the NE half of Sec. 9, H.&T.C. Sur., Blk. 34 ..... Drlg. 2,315 ft.

Atlantic Oil & Prod. Co.'s No. 4 W. D. Johnson, 330 ft. from NE line and 990 ft. from SE line of NE half of Sec. 9, H.&T.C. Sur., Blk. 34 ..... Rotary rig.

George Bentley et al's No. 1 C. Bergman, 330 ft. from NE line and 2,310 ft. from NW lines of Sec. 26, Blk. 5, H.&T.C. Sur. ..... T.D. 2,650 ft., plugged back to 2,470 ft., fishing.

George Bentley et al's No. 1 A. Emory, 1,830 ft. from NE line and 2,310 ft. from NW line of Sec. 24, Blk. 5, H.&T.C. Sur. ..... T.D. 2,901 ft.

Eppenauer Drlg. Co.'s No. 1 University, 330 ft. from N and 440 ft. from E of S half of Blk. 16 ..... Drlg. plug 2,380 ft.

Jack Leidecker et al's No. 1 A. Archenhold et al, 2,310 ft. from NE and 2,310 ft. from NW line of Sec. 23, H.&T.C.R.R. Sur., Blk. 5 ..... Drlg. 1,185 ft.

B. A. Thompson et al's No. 4 W. D. Johnson, 330 ft. from NE line and 2,310 ft. from NW line of the SW half of Sec. 9, H.&T.C.R.R., Blk. 34 ..... Rotary rig.

Wahlenmaier Pet. Corp.'s No. 1 R. M. Blodget, 990 ft. from SW line, 330 ft. from SE line of Sec. 26, H.&T.C. Sur., Blk. 5 ..... Drlg. 956 ft.

WINKLER COUNTY

Harry Adams et al's No. 3 Scarborough, 990 ft. from N line and 990 ft. from E line of Sec. 1, Blk. 77, P.S.L. Sur. ..... T.D. 2,530 ft.; running 6⅝-in. csg.

Colonial Oil Co.'s No. 2 State Scarborough, 990 ft. from W and 102⅔ ft. N of the NE cor. of Sec. 1, School Blk. 77, located in Sec. 1, Blk. W. F. ..... Rig up and S.D.

Sid Richardson's No. 3 John Scally, 2,310 ft. from the N line and 330 ft. from the W line of Sec. 94, G.&M.B.B.&A. Sur. ..... Drlg. 3,130 ft.; show oil 2,110 ft.

L. H. Wentz' No. 1 Daugherty, 330 ft. from N and 330 ft. W of Sec. 8, Blk. C-23, P.S.L. Sur. ..... Location.

Summary of California Oil Field Operations for July, 1933

According to figures collected by the American Petroleum Institute, the total production of crude oil in California for July amounted to 15,140,828 bbls., an average of 488,414 bbls. per day. This is an increase of 10,259 bbls. per day over June production.

CRUDE PETROLEUM PRODUCTION

(Figures of production and stocks are in barrels of 42 gallons)

Group No. 1—	Barrels per month	Daily average July, '33	Daily average June, '33	Daily average July, '32
Coalinga	333,431	10,756	10,749	11,058
Elk Hills	398,927	12,869	12,674	12,342
Fruitvale	131,489	4,242	4,625	4,218
Kern River	275,396	8,884	9,051	9,077
Kettleman Hills—Middle Dome	15,954	515	444	0
Kettleman Hills—North Dome	1,956,206	63,104	61,375	61,310
Lost Hills-Belridge	223,120	7,198	7,428	8,552
McKittrick	53,531	1,717	1,723	1,515
Midway-Sunset	1,433,966	46,257	46,201	49,083
Mountain View	17,896	578	788	0
Mount Poso	287,952	9,289	7,945	8,001
Round Mountain	82,031	2,646	2,696	2,921
Wheeler Ridge	14,315	462	472	502
Group No. 2—				
Capitan	395	13	12	0
Elwood	435,820	14,059	13,607	14,191
Rincon	62,404	2,013	1,889	1,552
San Miguelito	35,128	1,134	1,156	106
Santa Barbara	22,335	737	859	501
Santa Maria	99,540	3,211	2,435	2,953
Summerland	2,671	86	101	108
Ventura Avenue	1,021,291	32,945	33,075	29,821
Ventura-Newhall	101,624	3,278	3,252	3,498
Watsonville	1,860	60	60	62
Group No. 3—				
Coyote	314,787	10,155	10,008	10,050
Domingues	632,992	20,097	19,053	15,232
Fullerton (Brea Olinda)	233,513	7,501	7,488	8,159
Huntington Beach	1,157,432	37,337	30,649	21,635
Inglewood	367,945	11,870	11,863	13,726
Lawndale	6,454	208	233	212
Long Beach	2,309,898	74,513	74,546	70,838
Los Angeles-Salt Lake	27,355	883	909	1,025
Montebello	167,474	5,403	4,710	6,177
Newport	0	0	0	0
Playa Del Rey	350,616	11,310	11,660	15,088
Potrero	9,351	302	294	517
Richfield	215,446	6,950	6,429	6,264
Rosecrans	82,450	2,983	3,056	3,030
Santa Fe Springs	1,667,433	53,788	53,987	55,023
Seal Beach	360,769	11,638	13,092	12,750
Torrance	195,358	6,302	6,368	6,347
Whittier	34,753	1,121	1,193	1,082
Total July	15,140,828	488,414	478,155	471,356
Total June	14,344,664	478,155		
Increase	796,174	10,259		

TOTAL STOCKS HELD BY CALIFORNIA OIL COMPANIES, BOTH INSIDE AND OUTSIDE THE UNITED STATES

	July 31, 1933	June 30, 1933	July stock decreases	July 31, 1932
Heavy crude and all grades of fuel, gas and Diesel oils	100,975,055	100,492,854	*482,201	101,230,464
Refinable crude	36,539,987	37,504,810	965,728	40,297,652
Finished gasoline, engine distillate and natural gasoline	14,483,544	14,790,506	306,962	16,523,744
Crude gasoline and naphtha distillates	3,816,737	4,004,974	188,237	4,860,823
All other stocks	†7,571,778	†7,386,169	*185,609	†7,579,667
Total all stocks	163,386,201	164,179,313	793,112	170,492,354
*Increase. Barrels of coke included	†649,409	‡649,709		‡661,653

OIL FIELD DEVELOPMENT

Group No. 1—	New rigs up	Active drilling	Producers completed	Daily initial output	Active producing	Abd. wells Drillers	Abd. wells Producers
Coalinga	0	0	0	0	619	0	0
Elk Hills	0	0	0	0	202	0	0
Fruitvale	0	1	0	0	54	0	1
Kern River	0	1	0	0	961	0	6
Kettleman—Middle Dome	0	0	0	0	1	0	0
Kettleman—North Dome	1	19	5	10,579	41	0	0
Lost Hills-Belridge	0	3	0	0	150	0	0
McKittrick	0	0	0	0	112	0	0
Midway-Sunset	0	2	1	90	1,791	0	2
Mountain View	1	4	0	0	1	0	0
Mount Poso	4	2	2	598	101	0	0
Round Mountain	0	1	0	0	23	0	0
Wheeler Ridge	0	0	0	0	34	0	0
Group No. 2—							
Capitan	0	0	0	0	2	0	0
Elwood	1	1	2	3,255	42	1	0
Rincon	0	0	0	0	35	0	0
San Miguelito	0	1	0	0	2	1	0
Santa Barbara	0	0	2	365	13	0	0
Santa Maria	0	0	0	0	168	1	0
Summerland	0	0	0	0	62	0	0
Ventura Avenue	2	6	0	0	152	0	0
Ventura-Newhall	2	11	1	225	441	4	5
Watsonville	0	0	0	0	7	0	0
Group No. 3—							
Coyote	2	2	0	0	89	0	0
Domingues	2	5	0	0	43	0	0
Fullerton	0	0	0	0	558	0	0
Huntington Beach	7	19	6	10,479	277	0	1
Inglewood	0	0	0	0	214	0	0
Lawndale	0	0	0	0	8	1	0
Long Beach	6	26	1	166	967	0	2
Los Angeles-Salt Lake	0	0	0	0	172	0	0
Montebello	0	1	0	0	157	0	0
Newport	0	0	0	0	0	0	0
Playa Del Rey	0	2	0	0	188	0	0
Potrero	0	0	0	0	12	0	1
Richfield	4	7	0	0	175	0	0
Rosecrans	0	0	0	0	65	0	2
Santa Fe Springs	0	0	0	0	514	0	1
Seal Beach	0	0	0	0	112	1	0
Torrance	0	0	2	45	388	0	1
Whittier	0	0	0	0	139	0	0
Miscellaneous drilling	5	26	0	0	0	8	0
Group No. 4—							
Buttonwillow gas field	0	0	0	0	0	0	0
Dudley Ridge gas field	0	1	0	0	0	0	0
Goleta gas field	0	1	0	0	0	0	0
Total July	37	124	22	25,804	9,006	17	20
Total June	27	114	11	5,374	8,949	11	24
Increase	10	10	11	20,430	57	6	*4
Average for year 1932	15	198	15	13,069	8,928	16	14
Average for year 1931	22	207	21	30,370	8,911	20	15
Average for year 1930	60	434	63	48,710	9,632	21	27

*Decrease.

Deep Test in De Soto Parish Has Oil Showing; Sixteen New Locations in Louisiana District

By D. H. BANCROFT
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Sept. 4.—After several months' delay for casing and one thing and another, E. T. Oakes and others' No. 1 Bryant, NE NW Section 30-13-15, De Soto Parish, a closely watched deep test at Longstreet, bailed this week and had only a small show of oil after it had looked as if it would be a gasser, if it made anything at all. However, after standing overnight it filled up 50 feet and the program was to wash and if the show did not improve to drill deeper. Total depth is 4,660 feet with 7-inch cemented at 4,614 feet.

It was the chief item of interest in the week's developments and along with it was a dry test on George Greer and others' No. 3 Louisiana Central Lumber Co. in the NE NE Section 2-9-6, Catahoula Parish, at 905 feet. Located to the northeast of two previous wells which blew out with much gas and some salt water, the first test was made at this depth because it was thought the gas was coming from the base of the Jackson. In the two previous wells the blowouts did not occur until around 3,000 feet. When the second well blew out it was killed and after ripping casing was plugged back to 912 feet and still showed gas but was finally abandoned as a salt water hole with plenty of gas. Like its two predecessors, it is a Conroe-Jackson trend wildcat, with a history of many gas shows behind it.

Eleven Completions

Eleven completions in North Louisiana and Arkansas resulted in 293 bbls. new production, one gasser with an initial open flow of 23,400,000 feet and six dry holes, two of them in Arkansas, one of the latter being an abandoned location in Nevada County. George L. Pace's No. 1-B Cole, SE NE Section 11-11-11, De Soto Parish, was abandoned on account of salt water at 1,639 feet. Nick Barbare's No. 1 Ryals, NW NW Section 27-9-13, a mile southwest of production in the Converse district of Sabine Parish, was written off as a dry hole at 1,991 feet. R. L. Gay's No. 1-B Bowman-Hicks, SW NE Section 22-9-13, 1½ miles south and east of production in the same territory, was formerly listed as a 100-bbl. producer with salt water from 1,935 feet. After the first full gauge it went dead and tubing was to be run to see whether it would flow again, after blowing in unexpectedly with oil, water and an estimated 5,000,000 feet of gas.

Windsor Oil Co.'s No. 1 Graham, reported last week as a probable 50-bbl. well, made that on a 24-hour gauge from 1,560 feet. Located in the SE NW Section 20-9-13, in the center of the Converse proven area, the owners seem to think they have tapped a new horizon, or production in the bottom of the Nacatoch since they have not had any of the chalk from which previous Converse wells have produced. The first show was at 1,550 feet which prompted a core to 1,555 feet that failed to show anything. Six-inch was cemented at 1,536 feet and the hole drilled to 1,557 feet where the show developed after which they made 4 feet more hole and got their well. Meanwhile they have made locations for two more tests in Section 15-9-13, Sabine Parish. J. F. Morrissey's wildcat in the extreme southwest corner of Sabine Parish, No. 1 Wyatt Lumber Co., NW NW Section 13-4-12, a shallow test for the same pay that is producing in the Urania Field of LaSalle Parish on the east side of the State, was abandoned as a duster at 1,610 feet.

In the Zwolle district of Sabine Parish, Pelican Natural Gas Co. completed No. 23 Louisiana Long Leaf Lumber Co., SW SE Section 29-8-11, pumping 135 bbls. from 2,502 feet. After the first 10 hours it went dead and was brought back in making 35 bbls. Ben F. Smith's No. 5 Turner, NE NW Section 4-7-11, was dry and abandoned at 2,504 feet. J. C. Walton's No. 1 Alford, NW SW Section 14-7-11, was completed at 2,467 feet flowing 100 bbls. by heads.

Nemours Corp.'s first completion in the Monroe gas field in many months, No. 2 Harrell, Section 7-20-4, Union Parish, gauged 23,400,000 feet of gas with 900 pounds rock pressure from 2,140 feet.

In Arkansas, G. M. Lynch's No. 1 Porter, a location in the NE Section 23-10-22, Nevada County, on a 7,000-acre block, was abandoned. E. R. Henderson's No. 1 Snyder, NE SE Section 2-19-15, Union County, was dry and abandoned at 3,160 feet.

New Operations

Sixteen new operations during the week were divided 14 in North Louisiana and 2 in Arkansas with an old well in the Elm Grove-Sligo gas district of Bossier Parish rigged up and deepening. Two of these were in Converse territory of Sabine Parish, six in Zwolle and one each in Caddo, Grant, Ouachita, Richland and Union Parishes. The new Arkansas operations were in Nevada and Union Counties. United Gas Public Service Corp.'s No. 1 F. B. Treat, NW NW, Section 14-17-12, Bossier Parish, Sligo-Elm Grove district, completed in February, 1931, as a gas well at 1,764 feet, is rigging up to deepen for a test of the Woodbine at around 2,500 feet. M. Rodgers staked location for No. 1 Muslow, NW SE, Section 4-20-15, proven territory of Caddo Parish original field. Guy Cox and others have derrick pattern on location for No. 1 Lewis in the NW NE, Section 8-6-1e, Grant Parish. Century Carbon Co. made location for No. 3 Slaughter in Section 24-19-4, Ouachita Parish division of the Monroe gas field, and J. C. Prine drove stakes for No. 1 Boughton in the NW NW, Section 4-15-6, Richland Parish, making two jobs under way in that gas field.

Windsor Oil Co.'s two new locations are No. 1 Barr, SW NW, Section 15-9-13, and No. 2 Barr, in the same forty. In Zwolle territory, Magnolia Petroleum Co. has derrick up for No. 2 J. M. Cook, NE SW, Section 30-8-11; Peoples Oil & Gas Co.'s No. 1 Raines, SE NE, Section 15-7-11, is a derrick; George L. Pace made location for No. 1 Felix Green in the NE NW, Section 32-8-11, and for No. 2 on the same lease; D. D. Alexander's No. 2 Cooper began drilling August 27, cemented surface string at 400 feet and was drilling at 700 feet; H. Reeves' No. 1 Ponder, SE NW, Section 15-7-11, is an old well abandoned a month ago which, revamped, has cemented 6-inch at 2,378 feet, total depth 2,397 feet. In Union Parish Nemours Corp. has location for No. 2 Neal Moore in Section 24-20-3 for another Monroe gas field well.

Arkansas' new jobs are M. J. Carroll and others' No. 1 E. V. Olivet, a location in Section 3-16-26, half a mile south and a mile east of Miller County production; Scott and Richardson's No. 1 fee, SW NW, Section 23-10-22, Nevada County, a location, and Wilson and Chapman's No. 1-B Hadley, Section 3-18-13, an old well in Urbana territory of Union County, abandoned two years ago, drilling 6-inch plug at 3,650 feet.

NORTH LOUISIANA

W. N. Ball's No. 1 Hicks Grocery Co., Section 18-16-11, Elm Grove district of Bossier Parish, topped the Nacatoch at 796 feet, got an estimated 4,000,000 feet of gas on drill stem test but passed it up and was drilling at 1,000 feet. H. I. Morgan's No. 2 Smith, Section 22-19-11, Bellevue district, backed by two major companies, cored limey shale at 5,537 feet. B. A. Sherrell's No. 1 fee, NW NW, Section 18-19-11, was coring at 2,112 feet.

Early in the week there was a rumor that Arkansas-Louisiana Pipe Line Co. had tested oil in No. 1 Williams & Windham, NE NW, Section 4-22-16, Rodessa Trinity gas district of Caddo Parish, but there was nothing to it and the well was coring lime at 5,590 feet when last reported. J. B. Hutchinson was arranging to set 8-inch at 1,040 feet on No. 1 Story Phillips, SW NE, Section 28-16-13; John F. Kerper's No. 1 Barron, NE SE, Section 27-16-14, was drilling at 3,025 feet and McAnneny & Bird's No. 1 Lawhon-Bogan Linwood Park, SE NW, Section 12-14-16, set surface casing at 98 feet and was drilling at 450 feet. All three are in the play that is going on in southwestern Caddo Parish, particularly the first two, the latter being only 6 or 8 miles south of Shreveport.

E. R. Appleby tested a small show of gas at 2,430 feet on No. 1 Scales, SE SE, Section 35-13-12, DeSoto Parish, and was waiting for casing with the bottom of the hole in sandy shale at 2,430 feet. J. H. McKenzie had a small show of oil and gas at 2,430 feet on No. 1 B. F. Jenkins, NW SW, Section 35-15-12, and was setting 6-inch.

H. G. Samson's deep test in Section 12-21-7, Morehouse Parish, topped the red beds at 2,611 feet, ran a drill stem test at 2,755-85 feet, with top of the sand at 2,768 feet, and got 15 fourbles of salt water and 4 of mud in 15 minutes. Elevation is 104 feet and the hole was drilling at 2,853 feet. Evers and Collingsworth's No. 1 Hieman-Simmons, NW NW Section 40-4-1e, Rapides Parish, after a two months' shutdown, was washing to bottom, total depth 1,663 feet. United Carbon Co. began drilling No. 1 J. A. Noe, Section 14-17-5e, a location in the Richland Parish gas area for the past two months, set 12-inch surface pipe at 190 feet and 8-inch at 790 feet.

Converse District

In the Converse area of Sabine Parish, Feazel & Davenport's No. 1 Aaron, NW NW Section 32-9-13, revived last week after a four months' shutdown and washing to bottom, was again shut down at 1,973 feet. Helena Oil & Gas Co.'s No. 1 Jackson, SW SW Section 10-9-13, was shut down at 1,000 feet. Lambert and others' No. 1 Edwards, SW NW Section 29-9-13, plugged back from 3,360 feet to 2,000 feet and was waiting on acid to see what it would do to the chalk found at that depth where they got a show of oil at 1,971-2,046 feet. Joe Modisette's No. 3 Frost-Johnson, NE SW Section 16-9-13, shut down at 3,190 feet for the past six weeks, was drilling at 3,612 feet. C. L. Nixon's No. 1 Patrick, NE SW Section 21-9-13, tested dry at 1,575 feet and is waiting orders. Sabine Royalties Co.'s No. 1 Balew & Carter, NW SW Section 21-9-13, is waiting for acid to take effect after testing dry at 2,010 feet. E. M. Self's No. 1 Paul, NE SW Section 9-9-13, topped marl at 1,468 feet, Annona chalk at 1,760 feet and was dry on test at 1,900 feet.

Baird Brothers' No. 1 Trammell, SE NW Section 30-8-11, Zwolle district of Sabine Parish, set 6⅝-inch with packer at 2,390 feet, bailed dry at 2,490 feet and was waiting orders at 2,580 feet. Pelican Natural Gas Co.'s No. 21 Louisiana Long Leaf Lumber Co., SE SW Section 3-7-11, tested dry at 2,700 feet and is waiting orders; No. 24 set 7-inch on top of the marl at 2,360 feet and was bailing to test, total depth 2,446 feet. Williams & Spier gave No. 1 C. W. Marr, NW NE

Wildcat Operations in Louisiana-Arkansas

(Rotary operations unless otherwise designated)

North Louisiana

BIENVILLE PARISH

Company, well, farm name, section and block—	Remarks:
Poole & Johnson's No. 1 H. E. Sudduth, 1,170 ft. E and S, C Sec. 28-14-16	Derrick.

BOSSIER PARISH

J. A. King et al's (was A. W. Phillips, tr.'s) No. 1 Oden, 300 ft. W, 150 ft. N, SE cor. NW NW Sec. 4-18-13	S.D. 1,704 ft.
W. D. Ball's Hicks Grocery Co. (was Dr. C. R. Reed, tr.'s) No. 1 C.J.&B., Sec. 18-16-11	Drlg. chalk 1,000 ft.
B. A. Sherrell, tr.'s No. 1 fee, NE NW NW Sec. 18-19-11	Coring 2,112 ft.

CADDO PARISH

J. B. Hutchinson, tr.'s No. 1 Story Phillips, 330 ft. N and E, SW cor. SW NE SE Sec. 28-16-13	Arranging to cmt. 8-in. 1,040 ft.
J. T. Humphrey et al's No. 1 Powell, 330 ft. N and E, SW cor. NW SE Section 14-19-15	Began drlg. Aug. 27; 10-in. 105 ft.
John F. Kerper's No. 1 Barron, 350 ft. N and W, SE cor. NE SE Sec. 27-16-14	Fishing for junk 2,703 ft.
A. D. King, tr.'s No. 1 Roach, 641 ft. E, 375 ft. N, SW cor. SW SW Sec. 4-14-16	Began drlg. Aug. 10; 10-in. 226 ft.

CATAHOULA PARISH

Geo. Greer et al's No. 3 La. Central Lbr. Co., 775 ft. E, 360 ft. S, NW cor. NE NE Sec. 2-9-6	Began drlg. Aug. 31; drlg. 100 ft.

DE SOTO PARISH

Bailey Gantz et al's No. 1 Jenkins, NW cor. SE SW Sec. 35-15-12	Moving in heavy rig; T.D. 3,-050 ft.
J. H. McKenzie's (was P. B. Dyer's) No. 3 B. F. Jenkins, 330 ft. N and E, SW cor. NW SW Sec. 35-15-12	Cmtd. 6-in. 2,430 ft.

(Continued on Page 62)

Your Oil Representative at Washington

BIG THINGS are happening at Washington. An oil administrator has been appointed. The Committee of Planning and Co-ordination is in force. Actually our industry is being operated from Washington. As an oil man you should be thoroughly, accurately informed on the important oil news now "breaking" at the Capitol. Are you?

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Section 7-7-10, a shot of acid after testing dry at 2,810 feet.

Llano Del Rio Co-operative Colony's No. 1 fee, SE NE Section 6-1n-9, Vernon Parish, a Conroe-Jackson trend wildcat, was out of the Jackson at 3,155 feet and cored packed sand at 3,495 feet; Smith, Burton & Kelly cemented 10-inch at 524 feet on No. 1 Fullerton Minerals Co., SW SW Section 32-1n-5w, Vernon Parish, and were drilling at 1,200 feet. Dorcheat Syndicate began No. 2 Good Pine Lumber Co., SE SW Section 35-22-10, Webster Parish, their third test northeast of Cotton Valley, set 10-inch at 110 feet and were drilling at 1,200 feet. Both previous tests immediately adjacent tested salt water with considerable gas. H. W. Perritt and others' No. 1 Stovall, NW SE Section 2-22-9, Webster Parish, was drilling at 1,220 feet.

ARKANSAS

Arkansas is practically shut down from a drilling standpoint, at least so far as information from the several areas is concerned, and has been for the past three or four weeks. All there was of particular interest in the reports was George W. Harper's No. 1 Reed-Bodcaw, SW NW Section 16-15-22, Lafayette County, coring water sand at 2,414 feet, and Gleason-Wendell's No. 1 Patterson, SE NE Section 5-19-28, Miller County, shut down at 2,850 feet.

Daily Average Runs

Daily average runs from the field showed only an ordinary fluctuation, total runs of 58,015 bbls. being 565 bbls. more than was shipped out last week. Louisiana runs totaling 26,765 bbls. were an increase of 610 bbls. and Arkansas' 31,250 bbls. a decrease of 45 bbls. Runs from the several pools were:

NORTH LOUISIANA	
Caddo, light	4,520
Caddo, heavy	1,485
Converse	370
Cotton Valley	470
DeSoto-Red River	1,595
Elm Grove	340
Haynesville	3,710
Holly	210
Homer	2,695
Pleasant Hill	220
Sarepta-Carterville	800
Urania	2,565
Zwolle	7,785
Total	26,765
Last week	26,155
Increase	610

ARKANSAS	
Champagnolle	1,320
El Dorado	2,600
Lisbon	415
Miller County	....
Nevada County	540
Smackover, light	2,550
Smackover, heavy	22,000
Stephens	600
Urbana	1,325
Total	31,250
Last week	31,295
Decrease	45
Both states	58,015
Last week	57,450
Increase	565

Effect of Recovery Act on Petroleum Industry

(Continued from Page 18)

shall thus soon have a selfgoverning industry under Federal supervision it has seemed advisable to me to approve the code exactly as submitted in the usual manner and then to call for the advice of the planning and co-ordinating committee to the end that, prior to the effective date of the code, I may make a decision on these questions and on the provisions which you feel should be further considered."

Overproduction of oil in this country has created great waste and demoralized the industry generally. Repeated voluntary efforts at proration, unit operation and group development among producers of oil have generally failed, for two reasons—(a) inability of producers to agree; and (b) possible infraction of existing laws.

Article 3 provides that the President ascertain the "required production of crude oil to balance consumer demand for petroleum products," which shall be estimated at intervals by a Federal agency designated by the President. "The allocations when approved by the President shall be recommended as the operating schedules for the producing states and for the industry."

The Federal Government through the Secretary of the Interior under the so-called Leasing Act (41 Stat. 437) has during recent years curtailed production and controlled drilling on the public domain. No successful attempt by the Federal Government to control drilling and production within a state has yet been accomplished. Doubtless the approval of this code or pertinent parts thereof with reference to drilling, production and other intrastate activities by a public state regulatory body will eliminate any question as to the legality of the act. The major oil producing states have conservation, corporation, railroad or other regulatory bodies which have supervision over the production of petroleum and gas within the state. Such procedure would probably prevent the operation of state anti-trust laws, which might otherwise be violated by agreements of producers within the state.

Wildcatting is permitted under the code, but the shipment of petroleum or products thereof in or affecting interstate commerce from a new field or pool, which is not developed in accordance with the plan approved by the President, is a violation of the code. A new field or pool is one discovered after August 19, 1933, and in which 10 producing wells have not been completed.

Article 3 of the code supplants the ancient and destructive rule of capture, which has long outlived its usefulness in the oil business. It substitutes the orderly production of oil for the age-old law of the jungle—"the survival of the fittest."

The National Recovery Act forbids monopoly or monopolistic practices, but price-fixing under the code is permitted. These features are truly in an experimental state and for a period of 90 days the sufficiency of the formula will be tested, at the end of which time, the President has the power and authority to readjust the formula to meet the demands of the situation. "If and whenever the President shall prescribe a base price for gasoline then it shall be an unfair trade practice to buy, sell, give or receive in exchange or otherwise dispose of or acquire such gasoline at a lower price."

Administration

The fundamental administrative machinery will consist of:

(a) Planning and co-ordination committee, representing the petroleum industry and the National Recovery Administration. This committee will consist of 15 members, three of whom without vote shall be representatives of the National Recovery Administration and appointed by the President. The remaining 12 shall be representative of the petroleum industry. In order that an immediate organization may function, the President is authorized to select this number from men nominated by the industry. This planning and co-ordination committee will co-operate with the administrator as a planning and fair practice agency for the petroleum industry, making such recommendations to him as appear pertinent. This committee shall select a chairman from its own membership and the following working technical subcommittees:

(a) Statistical committee.
(b) Production committee.
(c) Refinery committee.
(d) Marketing committee.
(e) Accounting committee.
(f) Labor committee.
(g) Adjustment committee.
(h) Transportation committee.

(b) A Federal agency. A Federal agency shall be designated by the President and shall make estimates of petroleum requirements, together with such recommendations, allocations and inventories as may be required under the code. The Federal agency so designated is empowered to call upon the industry for all statistical and other reports on which it will base its recommendations and conclusions.

Its Effect

The effect of the National Recovery Act and the code approved thereunder should be a panacea for a demoralized industry. Its success is dependent upon general compliance with its provisions. The petroleum industry has failed to work out its own problems largely because voluntary co-operation could not be attained and existing laws forbade general co-operative agreements.

President Roosevelt has never put forth extravagant assertions or pledges about the National Recovery Act. He has cautiously spoken of it, only as a great and promising experiment. If it partially fails, something else must be tried. It is vitally important that each problem should be met with frankness and every appearance of hysteria avoided. Grave burdens rest upon the President in administering the code of this great major industry. He will do his best for the industry and it is its responsibility to support his efforts 100 per cent.

IMPORTANT BOOKS
for the Oil Man's Library

"ELEMENTS OF GEOPHYSICS"

This book, written by Dr. Richard Ambronn, has been translated into English by Margaret C. Cobb. It is now quite generally recognized as an authoritative work on geophysics as applied to problems encountered in the oil and gas industry, although the data applies equally well to problems in mining and hydraulics. It has served to consolidate into one volume the valuable portions of many articles and papers upon geophysical subjects, and contains a very complete bibliography of those papers as well as references to publications and books on this subject.

The book makes a broad survey of the field of investigation, and reviews the development of the various divisions of the science of geophysics and gives a summary of the results accomplished. At the same time an inspection of the present state of physical knowledge and theories is given that indicates the future trend of development of applied geophysics in meeting its problems.

This is not a textbook of geophysics. However, it has been prepared in the hope of interesting the mining and engineering technicians in eliminating the chaff from the immense number of doubtful undertakings which spring up with the success of scientific work. Serious geophysical investigations require the services of trained workmen and much time, and involve considerable expense. These costs, however, are vanishingly small in comparison with the capital required for the drilling of wells and for mining operations for which the geophysical investigations are preparatory.

If the geophysical-geologic work fails, the capital is lost; the selection and execution of the right methods of investigation, therefore, justifies the expense. With this in view Doctor Ambronn has written the book as simply as the difficult subject would allow. At times complete scientific expressions have been sacrificed to general clearness.

Having been thus prepared, the book can be recommended to anyone who has even a general interest in geophysics, for it is certain that much knowledge of this whole subject can be gained; and if the reader desires to delve deeper into this science the bibliography gives reference to numerous papers dealing with specific details.

The book contains about 375 pages and is divided into eight chapters. These chapters describe the various geophysical methods and their application, and also add much valuable information upon conditions existing in the crust of the earth, and their relationship with applied geophysics.

"Elements of Geophysics" may be purchased through the Book Department of The Oil and Gas Journal at the regular postpaid price of $5. Check or money order for this sum must be received before the book can be mailed.

Many Operating Problems Still Remain to Be Solved

(Continued from Page 36)

and received only $85.80 a month. The man who worked more hours received 51 cents an hour and the other received 55 cents an hour. Obviously, the share the work plant was at a slight disadvantage as a company. However, now the question arises whether the company working their men longer hours in the past will violate the spirit of the code if it reduces the pay envelope of that individual from $125 to $85.80 a month.

Obviously, if it does not make some reduction in the individual pay envelope its total labor costs for the month will be increased out of proportion to the average and to an extent that it will work an unreasonable hardship upon it.

It will take the untiring efforts of impartial representatives to equitably classify the jobs, arrange adjustments of pay and continue to maintain the exceptionally good spirit of co-operation between the men and companies with which the industry has been identified since its beginning.

FRENCH IMPORTS INCREASE

French imports of petroleum products during the first six months of 1933 amounted to 2,651,115 metric tons, compared with 2,022,800 tons during the corresponding months of 1932. The United States supplied 26 per cent in 1932, and 31 per cent in 1933; Russia, 21 and 14 per cent; Persia, 18 and 12 per cent; Venezuela, 12 and 14 per cent; Rumania, 12 per cent during both periods; and Netherland India, 1 and 9 per cent respectively. Imports of petroleum products into France except for crude petroleum showed a decline during the first six months of 1933, compared with a like period of 1932. Crude petroleum import increased from 311,000 metric tons (2,177,420 bbls.) during the first six months of 1932 to 1,051,214 metric tons (7,358,498 bbls.) during a like period in 1933.

RIG BUILDERS ELECT

D. D. Wertzberger, oil well supply manufacturer, was named president of the Mid-Continent Rig Building Employers Association at its organization meeting in Tulsa. Richard Sage, of Wichita, Kans., was named vice president, and Frank Mahan of Tulsa, secretary-treasurer. A code for the rig builders was tentatively drawn up, with by-laws of the organization incorporated.

Well in Lucien Pool Flows at the Rate of 12,000 Bbls. a Day; Shut In After 2½ Hour Test

By JAMES McINTYRE

Shell Petroleum Corp. and others' No. 1 Schoenwald, C NW NE Section 20-20-2w, in the Lucien consolidated block in the Lucien Pool in southwestern Noble County, flowed 1,245 bbls. in 2 hours and 25 minutes from Wilcox sand at a total depth of 5,145 feet. It made 365 bbls. the first hour, 665 bbls. the second hour and 215 bbls. the last 25 minutes it was open. The well was then shut in. The top of the first Wilcox was 5,105 feet; first show of oil was at 5,132-38 feet; there was a hole full of oil from sand at 5,141-45 feet and the well was shut in for tankage. When opened on Saturday it staged its big flow. The well is midway between the Lucien Consolidated's No. 1 Farr, a good well, and the Champlin Refining Co.'s dry hole.

Several nearly completed wells in Oklahoma, which have been holding the close interest of operators for two weeks or more, are not yet finished and are still the objects of attention. The Magnolia Petroleum Co.'s No. 1 Wagner, SW SW SE Section 2-14-3, Lincoln County, made 1,300 bbls. in 24 hours, flowing by heads from sand at 4,982-88 feet and was then shut in. There was no water showing. The Slick estate owns the south offset lease. West offset is owned by Phillips Petroleum Co. and the southwest offset by the Stanolind Oil & Gas Co.

The Stanolind Oil & Gas Co., Amerada Petroleum Corp. and Indian Territory Illuminating Oil Co.'s No. 1 Reed, in the Sasakwa townsite, Seminole County, was running tubing preparatory to installing gas lift. This well since it came in about the middle of August has been flowing large production for hours and then quitting, only to make head again and staging short periods of big production. One day in the past week it flowed over 3,300 bbls. of oil in 13 hours and on the last report had made 1,300 bbls. by heads in the course of a day.

The Noble County wildcat of Wentz & Feagin, No. 1 Eyler, C SE SW Section 10-21-2e, was drilling ahead below 4,245 feet. It is in Mississippi lime. It is the intention of the owners to make a thorough test in this hole and if nothing worthwhile is found in the lower horizons it will be plugged back above where it has shown oil and will be tested. The well is in the Morrison district.

Oklahoma Daily Production

Production for the week ending September 2 and for the preceding week follows:

	Barrels	
	Sept. 2	Aug. 26
Allen	10,995	10,870
Bowlegs	14,080	13,990
Bristow-Slick	11,200	11,100
Burbank	9,700	9,900
Lucien	4,305	4,470
Carr City	8,400	8,290
Earlsboro	11,020	10,540
East Earlsboro	18,110	13,795
South Earlsboro	1,835	2,115
Little River	20,340	21,875
East Little River	885	1,100
Oklahoma City	265,970	265,585
Seminole	13,960	14,260
East Seminole	1,810	2,065
Searight	3,035	3,195
Maud	1,455	1,616
Mission	6,120	6,350
Cushing-Shamrock	13,000	13,050
St. Louis-Pierson	30,235	29,650
Tatums-Sholem Alechem, Tussey	13,475	13,470
Other pools	148,210	148,224
Total Oklahoma	543,140	605,510

Osage County

In Osage County there were four completions reported, one of these a shallow dry hole. E. O. Plater's No. 10, NE SW NE Section 30-22-9, found a dry sand at 455-75 feet and abandoned the hole. Pueblo Oil Co. had a 125-bbl. well, after a shot, in No. 5, CWL NW SE NW Section 14-21-8; pay at 2,204-29 feet was shot with 60 quarts of explosive. Gray & Tolson's No. 2, NE SE SW Section 27-21-9, was shot with 30 quarts at 1,125-33 feet, and made 24 bbls. in 24 hours. Clint Moore estate's No. 1, NW cor. NE Section 34-21-9, made 8 bbls. in 24 hours after a 30-quart shot at 1,075-89 feet.

New work started included Producers & Refiners Corp.'s No. 2, NW cor. SW Section 15-24-7, cellar dug; Lewis Production Co.'s No. 1, NE cor. NW Section 33-24-7e, spudded; Sinclair Prairie Oil Co.'s No. 1, NW cor. NE Section 22-24-8, spudded; Clint Moore estate's No. 2-A, CNL SW SW SE Section 27-21-9, drilling below 250 feet.

Northwestern Oklahoma

Dave Morgan was repairing rig on No. 1 Cooper, NW NE NE Section 25-28-4, a Kay County wildcat, after finding a show of gas and water at 480-500 feet.

The Wentz & Feagin test, No. 1 Eyler, C SE SW Section 10-21-2e, Noble County, which found the top of the Mississippi lime at 4,180 feet and a showing of oil at 4,186 feet, was allowed to stand 72 hours and then was swabbed, recovering 77 bbls. of oil. It was estimated as a 25-bbl. well as it stood. Drilling was continued and the last report on the well made its total depth 4,196 feet.

In the Lucien area, Noble County, the Stanolind Oil & Gas Co. and Continental Oil Co.'s No. 1 Boley cemented 6-inch pipe at 4,698 feet after plugging back from 4,820 feet. This well had 1,800 feet of water in the hole at a total depth of 5,262 feet. The Continental Oil Co.'s No. 1 Hafner, C E half NE SW Section 18-20-2w, was drilling in lime at 5,471 feet. Top of the Mississippi lime was found at 5,305 feet. The Stanolind Oil & Gas Co. and Amerada Petroleum Corp.'s No. 1 D. L. Kolb, C NW NE Section 33-20-2w, had sand at 4,895-4,905 feet with a showing of oil and sand at 4,967-75 feet, with an oil showing. Viola lime was cored at 4,975-85 feet, total depth. Nine-inch pipe was cemented at 4,891 feet and the crew was rigging up standard tools.

The Shell Petroleum Corp.'s No. 1 Schoenwald was the most interesting well in the area. It is located in the C NW NE Section 20-20-2w. The water found at 5,085 feet was exhausted. The top of the first sand was found at 5,105 feet. There was a showing of oil at 5,132-38 feet, and the hole filled with oil when sand was penetrated at 5,141-45 feet. The well was shut down for tankage.

The Lucien Pool gives indications of being restricted mostly to the unitized block on which the discovery well in Section 17 was drilled.

Central Western Counties

In the Crescent area in Logan County, Gypsy Oil Co. has rig completed for No. 1 Good, C SW NW Section 27-17-4w. Continental Oil Co. has set 15-inch at 173 feet in No. 1 McConnell, C SE SE Section 28-17-4w.

In Payne County, L. G. Hulse was drilling No. 1 Sloan, a 1,300-foot gas test, SW NW SE Section 19-17-3.

In Lincoln County, J. Garfield Buel's No. 1 Smith, NW cor. SE Section 26-16-6, found Mississippi lime at 3,545 feet and was drilling at 3,640 feet. This is a wildcat test.

Amerada Petroleum Corp.'s test, on the Long farm, C NW NW SW Section 12-13-6, Lincoln County, was drilling at 1,000 feet.

In Tulsa County, S. W. Anthony was drilling at 300 feet in No. 2-A Cowles, C W half SW SE Section 6-16-13.

In southwestern Logan County, the Shell Petroleum Corp.'s No. 1 Faulkner, C SE NW Section 11-16-4w, was abandoned as dry in a hard white sand at 6,755 feet. It was the deepest active drilling well in the State.

Creek County

The Johnson Oil & Refining Co.'s No. 2 Carolina, 1,200 feet north and 990 feet east of the C Section 1-19-9, Creek County, was shot with 120 quarts in Skinner sand at 2,035-53 feet. It made 87 bbls. in 24 hours. Comail and others' No. 3 Brewer, C W half SW NE Section 8-18-7, Cushing Field, which was shot with 100 quarts at 2,450-2,513 feet, made 120 bbls. in 24 hours on a swabbing test.

In the Olive Pool, J. E. Crosbie, Inc.'s No. 1 Casey, in Section 3-17-8, reported

Wildcat Operations in Oklahoma

Northern Oklahoma

ALFALFA COUNTY

Company, farm and location— Remarks:

Acre et al's No. 1 Acre, C SW NE Sec. 14-24-11w.....Drlg. lime 5,810 ft.

BECKHAM COUNTY

Pattee Royalty Co.'s No. 1 Goose Tree, SW SE SW SE Sec. 32-10-23w .....Drlg. lime 3,820 ft.

CADDO COUNTY

Denver P. & R. Co.'s No. 1 Noe, NW SW SW Sec. 34-10-10w .....S.D. 9,540 ft.

COAL COUNTY

Dodd & Burton's No. 1 Grigsby, NW SE NE Sec. 35-1-8..Shot 5 qts.; 1,000 ft. oil in hole.
Funk & Russell's No. 1 Miller, SE NE Sec. 10-2-8 .....Fishing 3,750 ft.

GARFIELD COUNTY

J. H. Lewis' No. 1 Clark, C NW NW Sec. 34-31-4w .....Drlg. 700 ft.

HUGHES COUNTY

Dixie-Lee Oil Co.'s No. 1 Taylor, C NW Sec. 27-5-10.....Drlg. 350 ft.
Pioneer Pet. Co.'s No. 1 Brock, SE cor. Sec. 24-5-11 ....Spudded in and S.D.
Redwine et al's No. 1 Badger, C N half SW SW Sec. 4-5-11 .....S.D. 330 ft.
Scruggs et al's No. 1 Black, NE Sec. 13-9-10 .....Rigging up.

KAY COUNTY

Blauner et al's No. 1 Maple, NE NW SE Sec. 20-27-4....Drlg. 2,325 ft.
Morgan et al's No. 1 Bush, NW NE NE Sec. 25-28-4....S.G. 480-500 ft.

KIOWA COUNTY

Christian's No. 1 Jones, NE NW Sec. 8-7-18w .....S.D. 1,904 ft.
McWhirter et al's No. 1 Vandernock, NE NW Sec. 3-7-19w (O.W.D.D.) .....S.D. 2,155 ft.

LINCOLN COUNTY

J. Garfield Bull's No. 1 Smith, NW SE Sec. 26-16-6....Drlg. 3,640 ft.
Magnolia Pet. Co.'s No. 1 Wagoner, SW SE Sec. 2-14-3 ..Wilcox sand 4,982-86 ft. T.D.; flowed 840 bbls. in 20 hrs.; S.D. for pipe line.

LOGAN COUNTY

Amerada Pet. Co.'s No. 1 Long, C NW NW SW Sec. 12-13-6 .....Drlg. 1,000 ft.
Shell Pet. Corp.'s No. 1 Faulkner, C SE NW Sec. 11-16-4w.Dry and abd. 6,755 ft.

MARSHALL COUNTY

Robb et al's No. 1 Vittitoe, NE SE Sec. 11-5s-4e.....Rigging up rotary tools.

MURRAY COUNTY

A. E. Harden's No. 1 Sadler, NE Sec. 19-1-3.....Rig.
T. E. Revells et al's No. 1 Wolfe, NE cor. Sec. 18-1-3...Drlg. 400 ft.

MUSKOGEE COUNTY

J. S. Routt et al's No. 1 Escoe, CWL SE NE Sec. 17-13-17 Drlg. 905 ft.

NOBLE COUNTY

Sinclair Prairie's No. 1 Jeroma, SW cor. Sec. 15-20-2w..T.D. 5,337 ft.; will abd.
Wentz & Feagen's No. 1 Eyler, C SE SW Sec. 10-21-2...S.O. 4,186 ft.; drlg. lime 4,196 ft.

OKLAHOMA COUNTY

Houston et al's No. 1 Ketcham, CSL NW NE SE Sec. 32-14-2w .....Drlg. 3,290 ft.
Mid-Continental Oil Co.'s No. 1 Edwards, C SE SE Sec. 19-11-1 .....S.G. 3,160-80 ft.; S.D. 3,341 ft.
H. E. Rapp's No. 1 Price, CEL NE SW Sec. 19-14-3w....Drlg. 5,740 ft.
F. Russell's No. 1 Heapley, SW NW NE Sec. 23-12-2w..Drlg. 6,065 ft.

PAYNE COUNTY

Kemp & Nunnelee's No. 1 Crane, SW SE SW Sec. 10-17-6 Fishing for bit 1,425 ft.
O. N. Maines et al's No. 1 Scheidberg, NW SW NW Sec. 27-22-4 .....Wilcox sand 3,114-38 ft; wtr.; S.D.

PITTSBURG COUNTY

Moffett & Hall's No. 1 Jones, C NE NW Sec. 14-3-14 ..Drlg. 2,740 ft.; 4,000,000 ft. gas.

PONTOTOC COUNTY

Galbreath's No. 1 Stafford, NE SE SE Sec. 31-2-6.....Drlg. 220 ft.
Gilbert's No. 1 Starritt, NW SE Sec. 28-4-6.....Drlg. 1,313-20 ft; 5,000,000 ft. gas.
Choctaw O. & G. Co.'s No. 1 Thompson, SW NE SW Sec. 1-1-7 .....Drlg. sand 1,555 ft.
W. E. McGraw's No. 1 Mayhue, NE Sec. 19-2-8.....Drlg. 1,180 ft.
McGee et al's No. 1 Newborn, SW NE Sec. 31-5-4.....Rig.
Williams' No. 1 Kroth, NE SE Sec. 33-3-4.....H.F.W. 1,977 ft.
Wirrick's No. 1 Lee, SE SW Sec. 29-2-7 .....30 bbls. in 8 hrs.; 5,000,000 ft. of gas; T.D. 3,445 ft.; fishing.
Sledge et al's No. 1 Worley, SW SE SW Sec. 22-3-7w....3,000,000 ft. of gas at 1,177 ft.; U.R. 10-in. csg.

POTTAWATOMIE COUNTY

Payne Drlg. Co.'s No. 1 Lovelace, NW SW NW Sec. 27-6-4 T.D. 3,780 ft.; csg. collapsed.

SEMINOLE COUNTY

Sinclair Prairie's No. 1 Tierney, SE cor. Sec. 2-11-6.....Fishing 3,112 ft.
Stewart & Egan's No. 1 Sanderson, NE SW Sec. 27-6-5..Drlg. 3,220 ft.
Pilmico's No. 1 Bowlegs, SE NE SW Sec. 1-7-7 .....S.D. 800 ft.
Armstrong et al's No. 1 Diamond, NE SE SW Sec. 8-6-7..Set 8-in. csg. 2,918 ft.; T.D. 4,044 ft.; H.F.W.; P.B. to 4,021 ft.; S.D.

WASHITA COUNTY

McWhirter & Bost's No. 1 Hall, SW SE SE Sec. 28-8-19w.Drlg. 180 ft.

Southern Oklahoma

ATOKA COUNTY

Blake's No. 1 Galbreath, SW NE SE Sec. 5-1-15 .....Drlg. 348 ft.
Malernee et al's No. 1 Cole, NE NW Sec. 19-3s-14.....Drlg. 625 ft.
L. E. Stewart et al's No. 1 Stewart, SE SE Sec. 2-4s-10. .S.D. 2,051 ft.

JEFFERSON COUNTY

Wakefield's No. 1 Kelly, NW SE Sec. 1-5s-8w.....Drlg. 850 ft.

STEPHENS COUNTY

Doyle Oil Co.'s No. 1 Cunningham, SE NE NW Sec. 4-1-4w .....Drlg. 2,500 ft.

TILLMAN COUNTY

J. H. Everett's No. 1 Crane, SW cor. Sec. 15-3s-14w....Rig.

MAJOR COUNTY

Paul R. Robb's No. 1 Vittitoe, C NE SE Sec. 11-5-4.....Drlg. 30 ft.

last week, was put on the pump and is making 50 bbls. a day.

The Carter Oil Co. abandoned No. 1 Billy Hale, C W half SW NE Section 28-17-9. It had the top of the Wilcox sand at 3,284 feet and was drilled to 3,313 feet, with no oil showing.

O. M. Ireland has started drilling No. 1 Partridge, SE SW NE Section 32-19-11. Johnson Oil & Refining Co. has spudded No. 2 Prince, NW cor. NE Section 3-18-8. F. O. Aiken and others' No. 3 Tiger, NW SE NE Section 34-18-8, was drilling below 400 feet, and F. L. Marrs' No. 3 Tiger, SW NE NE Section 34-18-8, was drilling at 650 feet. Magnolia Petroleum Co. has made location for No. 1 Street, SE cor. NE Section 3-17-8. Alma Oil Co. has a rig up for No. 1 Kay, NW cor. SW Section 7-17-8. C. W. Titus has machine in for No. 1 Sena, NW NE NE Section 10-17-8. Bingham Brothers have started drilling No. 1-A Thompson, SW cor. NW SW NE Section 36-17-11. Merkle & Frane had a showing of oil and gas in Dutcher sand at 2,208-40 feet in No. 1 Cruel, NW cor. SW Section 31-17-12.

Good Well in Coweta

McIntire's No. 2 Tiger, C8L NE NW Section 2-17-15, Coweta district, Wagoner County, was shot with 50 quarts at 1,071-92 feet and flowed 120 bbls. in 24 hours. McIntire has made location for No. 2 Lovett, CNL SE SW Section 35-18-15.

In Okmulgee County, D. M. Logan was spudding No. 3 Pigeon, C N half SE NE Section 31-15-13.

Oklahoma County

The Wofford Drilling Co.'s No. 1 Armour, 1,219 feet south and 463 feet east of the NW cor. Section 2-11-3w, Oklahoma City Field, flowed 2,271 bbls. in 21 hours and 20 minutes and was shut in.

Denver Producing & Refining Co.'s No. 1 Frisco Freight House, 1,168 feet south and 685 feet east of NW cor. Section 2-11-3w, had checkerboard lime at 5,440 feet and Oswego lime at 6,175 feet. The crew set 6⅝-inch casing at 6,363 feet.

Gulf Production Co. of Oklahoma's No. 5 Medders, 1,305 feet south and 105 feet east of C Section 22-11-3w, flowed 519 bbls. in 1¼ hours and was shut in.

Frank Russell, Inc.'s No. 1 Highley, SW NW SE Section 23-12-3w, a wildcat in Oklahoma County, was drilling at 6,065 feet.

Wofford Drilling Co. has rig up for No. 1 Military Addition, and has made locations for Nos. 2 and 3, in the SW Section 34-12-3w.

There are 20 derricks up, 13 wells actively drilling, in the Oklahoma City Pool, and the remainder of the total of 44 rigs and drilling wells are either shut down, or completed and shut in.

In Greater Seminole

Phillips Petroleum Co.'s Calvin sand test, No. 6 Fixico, SW NW Section 20-9-6, Seminole County, flowed 284 bbls. of oil in 13 hours from sand at 2,761-66 feet.

Scruggs and others were rigging up standard tools to drill No. 1 Black, a wildcat, NE cor. Section 13-9-10, Hughes County.

W. D. Grisso's No. 1 Swarb, SE NW Section 2-8-4e, Pottawatomie County, was drilled to 4,348 feet without results in oil or gas and will be abandoned. There was a small showing of oil and gas in Hunton lime at 4,105 feet.

Atlantic Oil Producing Co. has made a location for No. 1 Davis, SW NE SE Section 13-8-6, Pottawatomie County.

Hilton Phillips and others' No. 2 Brister, SE SW SE Section 21-7-4, South St. Louis area, was drilled a foot deeper to 4,202 feet. It swabbed 450 bbls. of oil and 200 bbls. of water.

Amerada Petroleum Corp. has a rig up for No. 2 Harrison, NE NW SW Section 33-7-4. Turman Oil Co. and others are rigging up rotary for No. 1 Ward, SE NW Section 33-7-4.

Vaughn and others' No. 1 Lowther, NW NE SW Section 33-7-4, swabbed 340 bbls. of oil in 19 hours, after it had been acidized in the Viola lime at 4,092-4,109 feet.

Gypsy Oil Co. and others was rigging up rotary to start No. 1 Tenmas, SW cor. NW Section 25-6-4, Pottawatomie County.

Amerada Petroleum Corp. has cellar dug for No. 1 Smith, NE cor. NW Section 6-6-5, Pottawatomie County.

Armstrong and others' No. 1 Diamond, NE SE SW Section 8-6-7, Sasakwa district, had 2,500 feet of water in the hole and a small showing of oil after having plugged back to 4,021 feet, original total depth 4,044 feet. It was shut down for orders.

Keokuk Falls

In the Keokuk Falls area in northern Seminole County, the Carter Oil Co. and others' No. 1 Ray, C W half NE NE Section 23-11-6, was being tested. This is a Wilcox sand test. It had Cromwell sand at 3,760-75 feet, top of the Woodford at 4,176 feet, Misener at 4,194 feet, cored from 4,201-04 feet and recovered 1 foot of saturated Hunton lime. A Halliburton tester was being run. The Carter Oil Co.'s No. 1 Canard, a community test in C S half SW SE Section 35-11-6e, which began producing in June when it first made 1,617 bbls. of oil and 387 bbls. of water, was given a test in the past week and produced 556 bbls. of oil and 100 bbls. of water in 24 hours.

West Holdenville Developments

In the West Holdenville district, in Hughes and Seminole Counties, a number of near completions were reported. Boetcher and the Blackwell Oil & Gas Co.'s No. 3 Jacobs, NW SE SE Section 9-7-8, will be put to pumping. It swabbed 75 bbls. in 10 hours. Total depth is 2,934 feet. Limestone Oil & Gas Co.'s No. 8 Walker, SW SE NE Section 15-7-8, pumped 70 bbls. of oil and 30 bbls. of water in a 24-hour test. The oil is from sand at 1,186 feet; total depth 1,200 feet. Troup & O'Connor's No. 3 Haskett, NE SW SE Section 15-7-8, had sand at 1,187 feet with a showing of oil and the crew was underreaming 6-inch casing. Phillips Petroleum Co.'s No. 3 Jacobs, SW NE NE Section 16-7-8, at a total depth of 2,941 feet, flowed 21 bbls. of oil with 13,000,000 feet of gas in a 24-hour test. Winona Oil Co. and Jarvis & Holm's No. 1 Campbell, 330 feet north and 1,180 feet east of the SW cor. Section 20-7-8, which was acidized with 1,000 gallons, tested 8 bbls. on the pump in four hours, which pumped it off. The hole will be plugged back to Booch sand, which showed at 2,802-42 feet. It had been drilled to dolomite at 4,218-36 feet, total depth. The Dundee Oil Co.'s No. 1 Pickens, NE cor. Section 21-7-8, had 1,500 feet of oil in the hole and was drilling at 3,085 feet. Royce and others' No. 4 Walker, C N half NE SW Section 22-7-8, was completed as an 80-bbl. well from pay at 1,149-81 feet, total depth.

Pontotoc County

Patsy Oil Co.'s No. 2 Burke, NE SE Section 25-5-4, Pontotoc County, was drilling at 2,586 feet with 1,500 feet of oil in the hole.

H. L. Wirrick and others' No. 1 fee, SE SW Section 29-2-7, Pontotoc County, got Hunton lime at 3,436-45 feet, total depth. It flowed 30 bbls. of oil in "shows," with 5,000,000 feet of gas. The crew was fishing for tools.

Oil Showing in Beckham County

The Ramsey Petroleum Co.'s test on the Poarch farm, SE NE SW Section 24-9-23w, Beckham County, will test an oil showing at 2,685-89 feet. This well showed a production of 4,000,000 feet of gas at 2,664-79 feet. The Phillips Petroleum Co. and Ramsey Petroleum Co.'s deep test, No. 1 Martin, C NW NE Section 27-9-23w, was drilling at 2,625 feet in lime.

In Southern Fields

Hughes and others have started drilling No. 1-A Black, NE NW NW NE Section 16-7s-5w, Jefferson County.

George Pace and others were rigging up rotary on No. 1-B McDonald, CEL SE NE NW Section 28-2s-7w, Stephens County.

George Pace and others' No. 1 Duncan, SE cor. SW NW NW NE Section 28-2s-7w, was being rigged up to pump. It had shown 35 bbls. of oil and 35 bbls. of water from sand at 1,692-95 feet.

Skelly Oil Co.'s No. 1 Westheimer, SE NE SW Section 8-2s-2w, Carter County, was being tubed preparatory to putting it on the pump. The well had swabbed 77 bbls. the first 24 hours and 78 bbls. the second day. Total depth is 2,781 feet.

Carter Oil Co.'s No. 1 William Perkins, C SW NW SW Section 3-1s-3w, Tussey Pool, swabbed 495 bbls. in 21 hours. Eight-inch was set at 2,698 feet, total depth is 2,871 feet. Same company has made a location for No. 1 J. A. Nicholson, C SW NE SW Section 3-1s-3w, and for No. 1 Gideon Gray, C SE NE NE NE Section 10-1s-3w. Lloyd Oil Co. was drilling below 1,460 feet in No. 2 Majors, C NE NW SE Section 25-1s-3w. Samedan Oil Co.'s No. 1-A Curtis-Gorman was at a total depth of 2,479 feet and the crew was running 6⅝-inch liner.

The K. D. Oil Co. has made location for No. 3 Burton, SW cor. Section 30-1s-2w, Carter County.

Two Texas Gulf Coast Pipe Line Projects Completed by Stanolind Pipe Line Co.

By NEIL WILLIAMS

HOUSTON, Tex., Sept. 4.—Stanolind Pipe Line Co. has completed two pipe line projects in the Gulf Coast district. One is a pipe line from Huffsmith station in Harris County to Baytown on the Houston Ship Channel, a distance of about 42 miles of 10-inch pipe. The second project is a pipe line from Sinco on the Houston Ship Channel to Texas City, a distance of about 32 miles.

The first pipe line parallels the old line of Stanolind as far as Dawes Station, which is 9 miles north of Sinco (the old line turns south at Sinco), and then follows a new right of way on to Baytown. The oil after it reaches Baytown will be handled at the refinery of the Humble Oil & Refining Co. The most interesting part of the construction of this line was a new W.&K.M. cleaning machine that was used on the pipe before it was coated. All of the coating was done mechanically, which required a larger working force than if the work had been done by hand.

The other line will serve Pan American's new refinery which is under construction at Texas City. The new line will be used for awhile to fill storage being provided for the refinery. The pipe line was completed September 2.

The company has extended its pipe line facilities on account of the fact that its contract with the Sinclair Refining Co. expires this month. Under the terms of this contract the Stanolind has been supplying the Sinclair refinery at Sinco with approximately 25,000 bbls. of crude oil daily.

In connection with the construction of both of these pipe lines it was necessary to protect the pipe with three coats of prime coating on account of the character of the soil through which they pass. The pipe also was wrapped with special paper supplied by Johns Manville Co. In preparing the pipe for this coating, it was cleaned with a machine before applying the coating, a product made by the Standard Oil Co. (Indiana). The prime coat was allowed to dry five hours, while the pipe rested on skids above the ditch. After the first coat dried the second coating was applied. The coating was applied to the pipe at a temperature of 350° to 400°.

After the double coating had been applied, the pipe was wrapped with paper. The wrapping was done spirally with special machine furnished by Johns Manville. The pipe then was given its third coating, which was ragged on over the paper covering. After the third coating was applied and dried, the pipe was given a final coating of whitewash. The whitewashing of the pipe was to protect it from the rays of the sun and to help harden the outer coating. The maximum number of feet of pipe line that was completed in any one day on this project was 8,200 feet.

The completion of this project was delayed by the number of unusual tropical disturbances along the Gulf Coast, which caused continued rainstorms. The inclement weather started in July, which was about the time the pipe line construction started, and continued during the entire period the line was under construction.

Texas Commission Probe Into "Hot" Oil Racket

AUSTIN, Tex., Sept. 4.—A "hot oil" racket in the East Texas oil field found out through payment of the state production tax by the purchaser rather than the producer, is being investigated on behalf of land and royalty owners believed to have lost their share of 4,000,000 bbls. of oil a year in the past.

Some of the state tax payments are made legitimately by purchasers. In other cases, sources of the oil were concealed in reports made only by the purchasers. Some showed "miscellaneous purchases" that ran into hundreds of thousands of barrels per quarter.

Representatives of royalty interests have been checking these "blind" tax reports, preparing to appeal to both the comptroller, who receives payment on the oil, and to the Railroad Commission, which has power to regulate reports on production and purchases, for additional safeguards.

The commission, at its hearing this week, proposed a "Rule 9" to provide that the producer should be privileged to witness the checking of all pipe line runs. But in case of an unscrupulous producer, aiming to sell oil without accounting to land and royalty owners for their parts, investigators were not certain whether this rule would be adequate.

The State has been getting its production tax money on this oil, due to its power to check the runs of pipe lines and the input of each refinery. But where the receipts have been listed only as "miscellaneous purchases," without showing whether by truck, by pipe line or from what source or what lease, the royalty owners have not been sure they received accounting for all the production in which they had an interest.

Investigators said that in the past, before state and Federal regulations were tightened, the land and royalty owners were afraid to make an open complaint against an operator, lest he subject them to still greater losses.

ALBERT BLACKWELL DIES

CHATHAM, Ontario, Sept. 2.—Word has been received in Petrolia, Ontario, of the death recently in British Columbia of Albert Blackwell, a well known member of the Canadian drilling fraternity. Born in Wales 62 years ago Mr. Blackwell learned the drilling trade in Petrolia, drilling in Canada, the United States, Sicily and Persia. He spent some 15 years in Persia for the Anglo-Persian Oil Co., first as a driller and later as assistant manager.

GASOLINE FROM COAL PLANT

Following the preference of 8 cents per Imperial gallon to be granted on gasoline manufactured in Great Britain, Imperial Chemical Industries, Ltd., has authorized the erection at Billingham-on-Tees, Durham County, of a plant where an initial output of 100,000 tons a year of first grade gasoline is expected.

Objections to Restrictions in Greta Field May Be Made at Hearing in Houston, Sept. 15

By W. A. SPINNEY
Gulf Coast Bureau, The Oil and Gas Journal

HOUSTON, Tex., Sept. 4.—The Greta Field in Refugio County continues to be the most interesting and important area in the Texas Gulf territory, along with the leasing campaign in the Louisiana Gulf Coast district. Daily average production from the Gulf Coast territory showed a substantial increase for the week ending September 2, reaching a new peak due to the increase from the Conroe Field, which produced an average of 91,820 bbls. daily. New developments are expected from the Tomball Field, where an extension well is nearing the pay sands.

A hearing before the Texas Railroad Commission, to determine whether proration of production in the Greta Field shall be put into effect, will be held in Houston, September 15. The hearing was to have been held at Austin, Friday, September 1, but was postponed because William F. Knode, chief petroleum engineer, has not had time to complete the data on the field.

On September 1, there were 11 completed wells producing oil in the Greta Field and two other wells making gas, flowing out of control from craters. The production has been voluntarily restricted by the operators and has not been above 10,000 bbls. daily. When any field in the State reaches that mark it is subject to proration enforcement by the commission. It has been estimated by some that the Greta Field could make approximately 25,000 bbls. daily if produced wide open.

It is believed some of the operators in the Greta Field plan to contest any action to restrict the production of this pool by the commission because they have attempted to work out a voluntary agreement where the production would be kept within the limit of the requirements of the commission.

Interesting Wells

During the week a number of interesting wells were being completed or were on top of the sand. Floboots Oil Corp.'s No. 1 O'Brien, E. H. Winfield Survey, was completed making 433 bbls. of pipe line oil through two quarter-inch chokes, with a tubing pressure of 1,200 pounds and a casing pressure of 1,500 pounds. This well extended production about a half mile to the northeast from the discovery well. The completion will force at least three more offsets in the vicinity.

Blanco Oil Co.'s No. 2-A J. J. O'Brien, N. S. Crunk Survey, at latest report, was setting screen and liner to complete. The test found saturated sand at 4,343-58 feet, sandy shale at 4,358-68 feet, sandy shale at 4,368-79 feet, and sand from 4,379-99 feet, where it will be completed.

Circle W Oil Co.'s No. 1 J. M. O'Brien in the E. H. Winfield Survey has landed casing at 4,343 feet, after finding a showing of oil and gas in sandy shale at 4,326-43 feet. This company's No. 1 J. M. O'Brien is more than a half mile west of production. The same company's No. 2 J. M. O'Brien has landed casing at 4,348 feet, preparatory to testing a showing of oil. This well also is a quarter of a mile west of the nearest production.

The deepest drilling test in the Greta Field is the Nesral Oil Co.'s No. 2 Wilson Heard, in M. J. Ximines Survey. At latest report it was below 4,975 feet, which is about 500 feet below the 4,400-foot Greta sand, which is the regular producing pay horizon in that field.

Greta Field Production

Production from the Greta Field shows a daily average of approximately 8,500 bbls. for the week ending September 1, from a total of 11 completed oil wells. The daily gauges were as follows:

Date—	Bbls.
September 1	8,141
August 31	8,045
August 30	8,569
August 29	9,323
August 28	8,990
August 27	8,697
August 26	8,479

The rapid development in the Greta Field is indicated by the total number of operations that have been started since it was opened in May, 1933. Total operations on September 1, 1933, included: 11 completed wells, 21 drilling wells, 9 derricks, 8 locations and 2 gas wells that have cratered, making a grand total of 51 operations in the area. This represents an outlay of approximately $500,000 for development during the last three months.

New Work in Tomball Area

Humble Oil & Refining Co. announces two tests for the Tomball Field in Harris County. These are No. 2 Bloecher, located in the center of a tract in the C. Goodrich Survey, and No. 1 Fredericks, in the center of the west 18 acres of the tract in the John Hooper Survey. The Fredericks test will be the south offset to the Texas Co.'s No. 1 Emil Mueller and the Bloecher test will be 1,600 feet northeast of the Humble Oil & Refining Co.'s No. 1 Schultz well.

One of the interesting tests in the Tomball Field is the Humble Oil & Refining Co.'s No. 1 Gebhart, in the William Perkins Survey, located about 2 miles southeast of the other production in the field. This test is being watched as it is expected to determine the future possible development of the Tomball Field. The well was reported as drilling at 5,550 feet, in shale.

Tomball now has five oil wells and three gassers. Some express the opinion the field has been defined by dry holes and it is not expected to cover a large area. Its close proximity to the Conroe Field led many to believe at the time it was discovered that it would be as large a field as Conroe.

Conroe's Increasing Production

Development at Conroe, Montgomery County, continues at a steady rate. Daily production from the field for the week ending September 2, increased sharply. Sun Oil Co.'s No. 11 Foster, John Bricker Survey, south end of the field, was drilling on the last reports at 6,195 feet, the deepest hole in the field. It is believed to have found the regular Conroe pay horizon dry and is drilling deeper in search of another pay sand. A number of drilling tests are near the regular pay sand and will be on production next week.

Wells completed at Conroe were in the main part of the field and were also of average size. R. D. Simonlton and others' No. 2 Hooper, J. W. Watson Survey, made 75 bbls. per hour through a one-half inch choke at a total depth of 5,137 feet. Sun Oil Co.'s No. 2 Clark, S. Y. Sitton Survey, made 77 bbls. per hour, through a one-half inch choke at a total depth of 5,132 feet. Tide Water Oil Co.'s No. 24 A. Lewis, C. B. Stewart Survey, made 84 bbls. per hour through a one-half inch choke at a total depth of 5,149 feet. All was good pipe line oil.

Watching Louise Area

The Louise area in Wharton County is commanding the attention of Gulf Coast operators as to what can be expected from the numerous wildcat tests that are now under way. The Pure Oil Co. has made location for an additional well located on the Wallace Houston tract, in the T. W. Heard Survey. There are nine tests drilling in this area, and the new location makes the tenth without a single well producing oil. Pure Oil Co. has eight of these operations under way on its block of 8,000 acres in the vicinity. These tests are being drilled under lease obligations made several years ago.

Pure Oil Co.'s No. 1 Stewart, Morris and Cummings Survey, Section 25, reached a depth of 8,015 feet, and found what is considered a commercial well at 5,963-71 feet, where it tested 17 fourbles of oil in 20 minutes on a one-half inch choke. The hole was drilled deeper and other sands were found and tested but none gave any indications of making a commercial well. The drill stem twisted off at 8,015 feet and casing was set at 5,961 feet and the old hole was sidetracked at 6,505 feet. It was drilling new hole at 7,895 feet on the last reports.

One of the other tests is drilling at an interesting depth. This is Pure Oil Co.'s No. 1 Charles T. Kuntze, Morris Cummings Survey, Section 27. It cored from 6,005-21 feet, and after making a drill stem test found water. At latest report it was drilling deeper at 6,385 feet. It is about a mile southeast from the same company's No. 1 Stewart. These are the only tests that are deep enough at this time to give any indication of what can be expected in the way of oil production from the Louise area in Wharton County.

When it is taken into consideration that the development expenses will be in the neighborhood of $350,000 exclusive of the acreage, it is an unusual situation. After production has been definitely established in the Louise area of Wharton County, it will be necessary to construct a pipe line into the field. The nearest pipe line is at Markham, Matagorda County, about 30 miles to the south. It is owned by the Texas Pipe Line Co.

Nabers and others' No. 1 Lurker, E. T.R.R. Survey, a wildcat test that has been shut down for about six months at 5,026 feet, has resumed drilling operations. This test is about 12 miles east of the Pure Oil Co.'s drilling wells in the Louise district. The well was drilled to its present depth by Steed Production Co.

Failure in Calcasieu Parish

In Calcasieu Parish, Louisiana, Quintana Oil Co. has abandoned its No. 1 Nelson, Section 23-10s-9w, a wildcat test, drilled to a total depth of 8,269 feet. This wildcat failed to find any commercial showings of oil or gas in any horizon. It is located about 3 miles southeast of the Lockport Field. The only deeper wells that have been drilled in the State are in the Jennings Field, where production has been found at 7,400 feet, and at Sulphur. Quintana Oil Co. plans to move the rig to its Pilant Lake block in western Brazoria County, Texas, and start operations there in a short time.

Shell Petroleum Corp.'s No. 4 Heyd, Iowa Field, Calcasieu Parish, blew itself out during the week when it bridged after blowing wild on fire for two months. It was shot out several times but caught fire again. Operators have had a difficult time with this well due to heavy rains and fire, which have defied all efforts to bring it under control. They lately have been attempting to dig a tunnel from a distance of about 400 feet to the well to bring it under control as the hole has cratered for a distance of about 80 feet around the well. Total depth of the well is 4,929 feet. The test will be abandoned and plugged and another test started in the vicinity.

The deepest drilling test on the Gulf Coast is nearing the 10,000-foot depth. This is Yount Lee Oil Co.'s No. 1 E. W. Boyt, H.&T.C. Survey, Section 17, southern Liberty County. It was drilling on the last reports at 9,850 feet. The test has not had any showings. The last casing was landed at 9,155 feet.

At Livingston, Polk County, Shell Petroleum Corp.'s No. 2 Davis-Holmes, in the A. Viesca Survey, failed to make a commercial well at 4,346 feet and is pulling screen. This is the west offset to Dick Schwab's No. 2 Davis-Holmes, which was completed for a good well.

Gulf Coast Fields and Wildcats

Week Ending September 2

DAMON MOUND—BRAZORIA COUNTY

Company, farm and location—	Remarks
Intercoastal Oil Co.'s No. 11 Wisdom, 350 ft. E of No. 6, Blk. 51, Lot D, A. Durst Sur.	Drlg. shale 2,400 ft.
Sinclair Prairie Oil Co.'s No. 31-A Bryan, 155 ft. N. 45 deg. E of SW cor. of Blk. 28, Masterson Subd., and 140 ft. S. 45 deg. E. A. Darst Sur.	T.D. 7,586 ft.; standing.

MANVEL—BRAZORIA COUNTY

Texas Co.'s No. 1 Belcher (W.O.), 157 ft. SE of NW line and 223 ft. NE of SW line of Lot 18, Blk. A, Suburban Gardens Subd, H. N. Little Sur.	T.D. 5,537 ft.; P.B.; now drlg. 5,489 ft.
Texas Co.'s No. 5-A Belcher, S 40 deg. W 3,430 ft., S 48 deg. E 300 ft. from N cor. of "A" lease, H. N. Little Sur.	Derrick.
Texas Co.'s No. 6 Belcher, H. N. Little Sur., South 42° W 2,400 ft. and S 48° E 400 ft. from N cor. lease	Coring shale 4,193 ft.
The Texas Co.'s No. 1 Davis, 300 ft. out of S cor. Lot 42, H. N. Little Sur.	T.D. 5,812 ft.; cmtd. back to 3,790 ft. to test shallow sand.

BARBERS HILL—CHAMBERS COUNTY

McAlbert Oil Co.'s No. 2 Higgins	Drlg. shale 4,986 ft.
Mills Bennett Prod. Co.'s No. 4-A Barber (W.O.), Henry Griffith League	Drlg. sand showing oil 5,620 ft.

(Continued on Page 62)

Good Wells in Several Kansas Counties Result in Slight Crude Production Gain in the State

By JAMES McINTYRE

A well in the Winfield Pool, Cowley County, which swabbed 1,225 bbls. in one day; a number of completions and near completions showing oil in the Chase County Pools; good and bad results of drilling in the Hollow Pool in Harvey County, and new oil wells in Ellsworth, Kingman and McPherson County featured the week's field news in Kansas.

Marvin Lee, technical adviser for the Corporation Commission, issued a letter to the producers in the Hollow-Church area in Harvey County in which he said:

"On account of gas wastage from Mississippi lime combination wells in this field, and the apparent conflict of legal rights of producers and landowners, resulting from the waste of gas and gas energy with its attendant economic waste;

"The commission requests that the advisory committee and producers meet and suggest some plan that would stop complaints of improper operation of wells and improve present conditions.

"Please attend or send an authorized representative with information on your wells, and assist in working out a practical solution of this situation, which would be made more expensive if appeal for a strict application of the gas waste prevention features of Kansas law is forced."

Production of Pools

The estimated average daily production of a number of pools and fields in Kansas for the week ending August 26 and for the preceding week follows:

Field or pool—	Sept. 2	Aug. 26
Hollow	12,055	13,725
Ritz-Canton	22,620	21,960
Voshell	6,870	6,950
Sedgwick County	9,430	9,655
Mabee (Nikkell)	7,805	7,105
Ellsworth County	3,177	3,285
Rice County	6,916	6,647
Barton County	347	348
Reno County	582	1,930
Greenwood County	11,150	11,250
Butler County	17,600	16,500
Other pools	30,033	29,570
Total Kansas	129,505	128,925

Big Well in Winfield Pool

Sinclair Prairie Oil Co.'s No. 6 Dibbens, 970 feet south and 1,295 feet west NE cor. Section 22-32-4, Winfield Pool, Cowley County, got Siliceous lime at 3,246-57 feet. The well swabbed 1,225 bbls. in 24 hours and was completed.

M. B. Armer and others were shut down for casing in No. 1 Bowman, SE NE SW Section 2-32-4. Chat was topped at 2,977 feet, total depth 2,982 feet. Roth & Farout's No. 2 Smiley, NE SE NW Section 12-32-4, had Kansas City lime at 2,538 feet, set 5-inch casing at 2,540 feet, total depth 2,566 feet. The hole filled 1,800 feet with oil. M. B. Armer and others, in No. 2 Fuller, SE SW SW SE Section 22-32-4, an old well drilled deeper to 3,386 feet, was plugged to 2,870 feet to save a 500,000-foot gas production.

Harvey County

Lario Oil & Gas Co. and others' No. 1 Wall, NE SW SW Section 4-22-3w, Hollow Field, in Harvey County, which was drilled to 3,606 feet, was plugged back to 3,547 feet and treated with 1,000 gallons of acid with no result. The well was abandoned as dry.

Shell Petroleum Corp.'s No. 3 Nikkell, SE SW SW Section 8-22-3w, was completed. It pumped 288 bbls. of oil and 60 bbls. of water in 24 hours.

Skelly Oil Co. and Selby Oil & Gas Co.'s No. 4 Schmidt, which had pay at 3,433-40 feet in Hunton lime, swabbed 5 bbls. per hour, but after a 1,000-gallon acid treatment the production showed no increase.

Frost, Study and others' No. 1 Martens, NE SE SE Section 19-22-3w, an old well drilled deeper, got the Hunton lime at 3,456 feet and drilled to 3,472 feet. The hole filled 1,000 feet with oil in one and one-half hours.

Mid-Kansas Oil & Gas Co.'s No. 1 Ediger, SE NW Section 19-22-3w, was abandoned. It had Siliceous lime at 3,645 feet and a hole full of water at 3,655 feet, total depth 3,664 feet.

Magnolia Petroleum Co.'s No. 2 Schmidt, NE NW NE Section 30-22-3w (a twin), swabbed 600 bbls. in 21 hours. Viola lime was topped at 3,483-3,506 feet and Wilcox sand at 3,507 feet, total depth 3,526 feet.

W. C. McBride, Inc.'s No. 4 Schmidt, NE cor. Section 30-22-3w, which had been treated with 1,000 gallons of acid pumped 385 bbls. of oil and 385 bbls. of water in 24 hours, new total depth 3,459 feet.

McPherson County Results

In the Voshell Pool, McPherson County, Continental Oil Co.'s No. 1 Tipton, NW SW NE Section 2-20-3w, swabbed 130 bbls. in 24 hours. It got first oil at 3,026 feet and an increase at 3,040 feet, total depth 3,053 feet. It will be treated with acid.

In the Ritz-Canton Field, the Texas Co.'s No. 5 Munn, NE cor. Section 12-20-2w, was treated with 1,000 gallons of acid and swabbed 85 bbls. in 10 hours. It was producing from Viola lime at 3,378-98 feet. It was an old well drilled deeper.

Phillips Petroleum Co. and Shell Petroleum Corp.'s No. 2 Wiles, CEL NE Section 25-19-2w, made 162 bbls. in 24 hours after a 1,000-gallon acid treatment in Viola lime at 3,405-14 feet. It will be treated again.

Youker and others' No. 2 Eaton, SW NE Section 26-19-2w, had 400 feet of oil in the hole from Viola lime at 3,389-3,414 feet.

Ellsworth County

In the Stoltenberg Pool in Ellsworth County the Derby Oil Co.'s No. 2 Stoltenberg A swabbed 38 bbls. per hour from Siliceous lime at 3,359-64 feet.

Gypsy Oil Co. and Stanolind Oil & Gas Co.'s No. 1 H. Stoltenberg, SW SE NW Section 22-16-10w, had Siliceous lime at 3,337-45 feet total depth, and it swabbed 175 bbls. of oil and 225 bbls. of water in 19 hours.

New Oil Wells in Rice County

Garden and others' No. 1 Thodel, C NW NW Section 11-21-7w, a wildcat in Rice County, swabbed 23 bbls. in one hour from chat topped at 3,358 feet, total depth 3,380 feet.

The Chase Townsite Pool and nearby pools in Rice County show completions and near completions in this week's report, together with new operations started, including locations for extension wells. The Atlantic Petroleum Corp. has made location for No. 1 Brandenstein, C SE SE Section 10-19-10w. Lebow and the Texas Co. have made locations for No. 2 Collins, NW SW SE Section 16-19-9w, and Ramsey Petroleum Corp. and others have made location for No. 1 Day, Block 19, Chase townsite, NE cor. SE Section 31-19-9w.

The National Refining Co.'s No. 2 Sherman, NW SE SW Section 16-19-9w, was completed. It made 370 bbls. in 24 hours on the pump from Siliceous lime at 3,175-3,200 feet.

Derby Oil Co.'s No. 1 Monroe, NE SE Section 31-19-9w, townsite, swabbed 1,200 bbls. in 24 hours. Top of Siliceous lime at 3,238 feet, total depth 3,262 fet.

Gypsy Oil Co.'s No. 1 Burden, NE SE SE Section 31-19-9w, filled up 1,700 feet with oil in two hours, coming from Siliceous lime at 3,217-27 feet.

Ramsey Petroleum Corp. and others' No. 1 Linville, 960 feet south and 180 feet west of NE cor. Section 31-19-9w (townsite), had 2,000 feet of oil in the hole from Siliceous lime at 3,240-73 feet.

Gypsy Oil Co.'s No. 1 McGlynn, NW SW SW Section 32-19-9w, filled up 1,800 feet with oil in one hour. Top of the Siliceous lime was found at 3,212 feet; 6-inch perforated casing was set at 3,219 feet total depth.

Ramsey Petroleum Corp. and others' No. 1 City Park, NE NW SW Section 32-19-9w, pumped 200 bbls. in 24 hours, 3 per cent water, from Siliceous lime at 3,248-75 feet.

Palmer and others' No. 1 Specht, SE SW SW Section 16-20-10w, Rice County, had 1,800 feet of oil in the hole. It set 6-inch casing at 3,056 feet, had Kansas City lime at 3,060 feet, first oil at 3,130 feet and salt water at 3,140 feet. It was plugged back to 3,131 feet. It had not been tested.

In Kingman County

D. R. Lauck's No. 1 Church, SE SW NE Section 10-28-6w, a wildcat in Kingman County, had Kansas City lime at 3,107 feet and a showing of oil at 3,185-95 feet, but got a hole full of water at 3,360-75 feet. It was drilling at 3,405 feet.

In the Cunningham area, in Kingman County, Skelly Oil Co.'s No. 1 S. Miles, 1,270 feet east and 345 feet south of C Section 30-27-10w, which was treated with 1,000 gallons of acid, swabbed 318 bbls. in 24 hours and was completed.

Sedgwick County

In the Greenwich area in Sedgwick County, Shell Petroleum Corp.'s No. 8 Fisher, CEL NE NW SE Section 15-26-2e, got Viola lime at 3,192 feet and drilled to 3,198 feet. It swabbed 148 bbls. of oil in 24 hours and then pumped 865 bbls. of oil and 160 bbls. of water in 24 hours. Same company's No. 7 Lygrisse A, SW NE NE Section 15-26-2e, was drilling at 3,075 feet.

Developments in Greenwood

In Greenwood County, Daley and others were rigging up machine for No. 1 Hendrickson, SE cor. NW Section 9-25-9.

C. Sheedy's No. 5 Mills, SE SW NE Section 24-25-13, made 100 bbls. in 24 hours after a 40-quart shot at 1,465-73 feet.

Rex and others' No. 1 Huff, NW cor. SE Section 29-25-14, was abandoned as dry in Mississippi lime at 1,550 feet.

Abe Markus and others' No. 1-A Smith, SW NW NE Section 6-24-12, pumped 50 bbls. in 24 hours after a 100-quart shot at 1,741-67 feet.

Skelly Oil Co. and Tidewater Oil Co.

(Continued on Page 60)

Wildcat Operations in Kansas

(Descriptions are East unless marked otherwise)

Company, farm and location—	Remarks:
BARTON COUNTY	
Atlantic O. P. Co.'s No. 1 Schneider, C NE SW Sec. 15-20-13w	Rigging up.
Helmerich & Payne's No. 1 Everhigh, C SW SE Sec. 18-18-13w	Set 20-in. 85 ft.; drlg. 470 ft.
Skelton et al's No. 1 Ott, C SE SE Sec. 14-19-14w	O.W.D.D.; T.D. 3,097 ft.; C.O.
BUTLER COUNTY	
Hartman et al's No. 1 McCann, SE SW NW Sec. 7-25-4	Drlg. 3,236 ft.
COWLEY COUNTY	
E. Yarnell's No. 1 Speer, SE NE NE Sec. 31-33-6	S.D. 1,400 ft.
DICKINSON COUNTY	
Dutch Oil Co.'s No. 1 Phillips, C NE NW Sec. 15-15-1	Spudded.
DOUGLAS COUNTY	
Haslett et al's No. 1 Churchbaugh, C SW SW Sec. 10-14-19e	Dry and abd. 1,275 ft.
FINNEY COUNTY	
National Ref. Co. et al's No. 1 Smith, C SE SW Sec. 2-23-29w	Rigging up.
GEARY COUNTY	
Ledauris' No. 1 Fechner, C SE NE Sec. 27-12-5	S.D. 967 ft.
GRAHAM COUNTY	
Schleimeyer et al's No. 1 Smith, SE Sec. 34-8-25w	S.D. 4,180 ft.
HARVEY COUNTY	
Holbert Oil Co.'s No. 1 Harder, SE SW SE Sec. 11-23-1e	Drlg. 450 ft.
L. H. Wents' No. 1 Bestvater, SW SE SW Sec. 8-22-1e	12-in. at 1,282 ft.; drlg. 1,603 ft.
KINGMAN COUNTY	
D. R. Lauck et al's No. 1 Church, SE SW NE Sec. 10-28-6w	H.F.W. at 3,375 ft.
MARION COUNTY	
Hutchinson Oil & Gas Co.'s No. 1 Miller, NW cor. Sec. 6-17-3	S.D. 2,700 ft.
McPHERSON COUNTY	
Bailey-Carlson et al's No. 1 Carlson, SE cor. Sec. 4-19-3w	Abd. 2,558 ft.
Sever and Heesman's No. 1 Scrag, S½ S½ Sec. 23-19-4w	Rig on ground.
Regina O. & G. Co.'s No. 1 Vogts, C SE SE Sec. 8-20-1w	Drlg. 1,900 ft.
Roth & Faurot's No. 1 Swanson, NE SW NE Sec. 13-18-1w	Rig.
Chum et al's No. 2 Nelson, SW SE NW Sec. 12-18-4w	Dry and abd. 1,070 ft.
NORTON COUNTY	
Jim Madison's No. 1 Boesker, SE NW Sec. 29-2-1w	Spudded.
Moody Seagraves' No. 1, NW Sec. 34-3-22w	Drlg. 1,150 ft.
Paramount Oil Co.'s No. 1 Steinkirchner, NE SE SE Sec. 25-19-1w	Drlg. 1,075 ft.
PRATT COUNTY	
Minnesota O. & G. Co.'s No. 1 Hardesty, SW SE SE Sec. 28-27-11w	H.F.W. 4,417-27 ft.; pulled 5-in. pipe and P.B. to 3,640 ft.
RENO COUNTY	
Watchorn O. & G. Co.'s No. 1 Soper, C NE NE Sec. 31-23-4w	Drlg. 3,885 ft.
Mylius et al's No. 1 Patton, SE NE Sec. 25-23-5w	Drlg. 3,076 ft.
Roth & Faurot's No. 1 Yoder, C NW NW Sec. 15-24-5w	Crooked hole; S.D.
RICE COUNTY	
Garden et al's No. 1 Thodel, C NW NW Sec. 11-21-7w	T.D. 3,280 ft.; swbd. 23 bbls. in 1 hr.
WOODSON COUNTY	
Tom Palmer et al's No. 1 Naylor, NE SW NE Sec. 14-24-14	Drlg. 1,500 ft.

Californians See Better Times Ahead With NRA Code Backed by Enforcement of Legislation

By L. P. STOCKMAN
Staff Correspondent, California Fields

LOS ANGELES, Calif., Sept. 4.—The California oil industry, which has experienced a number of ups and downs during the past several years due to the lack of regulatory legislation, is keenly alert to the advantages expected to ensue from application of the NRA code. Producers in California have been operating for the past several years in a co-operative effort to curtail crude oil production, and while this movement has been more or less successful, certain inequities have arisen due to the refusal of a small minority to participate in the plan to restrict production to current requirements. Several attempts have been made to remedy this condition by enactment of regulatory legislation without success. Initial work along this line resulted in the enactment of the California gas conservation law, but this measure failed to accomplish the desired results due to litigation. The statute in question was subsequently upheld by the Supreme Court, but by the time it was validated the crisis had been passed. The gas conservation law is still on the statute books and can therefore be enforced in case operators blow any considerable quantity of natural gas into the air or are guilty of underground waste. At the last session of the legislature California was brought into line by passage of a bill that provides recognition for all NRA codes. This gives state officials authority to enforce national codes and makes compliance with the national code mandatory on the part of all California producers and refiners.

Huntington Beach

Operators in the Huntington Beach Field are keenly awaiting the impending production test to be made by the Simaroo Oil Co. on No. 2 Morris, located in the Seventeenth Street town lot area. The importance which attaches to this test, which is expected to be started within the next 48 hours, is due to the fact that the well has shown more promise than any other project drilled in the Seventeenth Street town lot area up to the present. This well has cored more oil sand than any other well finished in the town lot area and consequently operators expect it to set a new record for maximum initial daily production. The Wilshire Oil Co.'s No. 15 Huntington has shown the largest initial up to the present as this well was brought in flowing 4,500 bbls. of clean 26.1 gravity oil per day. Those in close touch with developments in the town lot area expect the Simaroo's No. 2 Morris to substantially exceed the present record.

Producing wells in the Seventeenth Street town lot area of the Huntington Beach Field showed an abnormal decline during the past 15 days, although the completion of new wells from time to time has prevented this decline from being reflected in current daily production. The production of 17 wells in the town lot area has declined from 25,500 bbls., produced on August 15, to 19,575 bbls. on August 31. This decline is due to normal conditions and does not reflect any substantial reduction in the size of flow nipples or additional curtailment of production. Two wells were put on production in the Seventeenth Street town lot area during the past week, but neither registered substantial production. The Bestmi Petroleum Co. successfully recompleted its No. 5, doing 100 bbls. per day on a compressor from a zone at 3,277-3,370 feet. This well, originally completed by George F. Getty, Inc., several years ago, failed to result in a natural flow early in August and the company was consequently obliged to install a compressor. The Benito Huntington Oil Co. completed No. 1 Huntington flowing 408 bbls. of 26.1 gravity oil and 990,000 feet of natural gas per day from 4,421 feet. The company is rigging up a compressor in the hope of stimulating production as the well failed to come up to expectations. Notwithstanding the abnormal decline in production registered by recent completions, operators are making preparations to start 14 new wells in the Seventeenth Street town lot area. The Wilshire Oil Co. heads the production list in the new area with five wells producing 6,290 bbls. per day. In addition to having the largest current production in the Seventeenth Street town lot area, the Wilshire has the largest well, No. 15, producing 3,905 bbls. per day, and has finished the only gas well completed in the district up to the present. The Wilshire has four other wells headed down to the pay and is rigging up No. 33 Huntington preparatory to an early spud. McVickers & Rood, with a current daily production of 5,520 bbls., are right behind the Wilshire and are expected to exceed the latter's current production if the Simaroo's No. 2 Morris comes up to expectations. McVickers & Rood have four producing companies in the Huntington Beach town lot area. These companies are the Camroo, Macaroo, Simaroo and Vicaroo, all of which, with the exception of Camroo, have completed one or more producing wells in the zone now undergoing development.

Montebello

The Universal Consolidated, subsidiary of the Richfield Oil Co., recompleted No. 1 Cruz in the Montebello Field of Los Angeles Basin, and returned it to production flowing 550 bbls. of oil and 250,000 feet of natural gas per day. This well, a deep test located in the extreme eastern part of the field, came in a week or so ago flowing approximatly 1,500 bbls. of fluid cutting 50 per cent on a preliminary production test. A water witch indicated a defective shutoff job and the company accordingly recemented the 8⅝-inch at 6,954 feet. As a precautionary measure, the company only drilled out 5 feet below the cement, as there was still some doubt whether the salt water produced by the well on the original test was coming from the formation or from behind the shoe of the water string. Late this week No. 1 Cruz had built up to 910 bbls. per day without any comparable increase in the production of natural gas. The well appears to be drilling itself in and may possibly show a further increase in production after it has cleaned itself out. The well has shown some peculiar characteristics since being recompleted, but this may be overcome within another few days. For several days the well has shown a cut varying from 1 to 10 per cent, depending upon when the sample was taken. It will flow for several hours producing clean oil and then show considerable emulsion for a short period. This will be followed by a period of clean production and an alternate period when a slug of water is brought to the surface. The significance of this irregularity is not yet apparent, but the potentiality of the well is expected to be determined within the next 10 days. If the Universal's initial producer in the deep zone holds up the company contemplates the drilling of three new wells in the eastern end of the Montebello structure. Permits have already been taken out for No. 2 Cruz, No. 1 Alvitre and No. 1 Repetto. M. K. Nance has started rig construction for a deep test to be drilled on a shoestring strip bisecting two leases of the Standard, but drilling operations may be retarded due to litigation, as the strip in question was originally eliminated from a lease for the specific purpose of providing an easement for a road. The legal fraternity is somewhat divided as to the status of this lease, although lawyers specializing in land titles are of the opinion that Nance has clear title to the property in question.

The General Petroleum conducted production test on No. 15-A Barnard in the prolific Ventura Avenue Field during the early part of the current week, but the well failed to come up to expectations due to water trouble and the company is accordingly undertaking remedial work. This new well, finished in the deep 57 zone discovered by the Associated in April, 1931, was swabbed in, producing 7,100 bbls. of 30.1 gravity oil and 2,540,000 feet of natural gas per day from an even 9,000 feet. The company subsequently killed the well as the output was cutting approximately 55 per cent on completion of the well and failed to drop below 35 per cent. No. 15-A Barnard, which was finished with a 6⅝-inch combination string carrying 1,004 feet of perforated and cemented through perforations at 7,966 feet, showed plenty of kick during its short life as pressure gauges showed 1,150 pounds on the casing and 540 pounds on the tubing. If the water in this well is due to a defective shutoff and is subsequently eliminated as a factor, this well will definitely prove up the existence of a highly productive zone in the northern part of the structure. The Associated's initial production in this deep zone was No. 57 Lloyd, brought in flowing 4,850 bbls. per day from 8,723 feet in April, 1931. This discovery was subsequently confirmed by the Associated when No. 83 Lloyd was finished several months later. The Shell, holding leases in the western end of the Ventura Avenue structure, has not yet tested out the deep 57 zone, but will probably do so in the not far distant future. If the General Petroleum succeeds in developing clean production in No. 15-A Barnard, the importance of the company's Notten lease will be greatly enhanced.

San Miguelito

The Continental Oil Co., due to the failure of No. 2 Grubb to clean up, has killed this well and effected a recement job. No. 2 Grubb came in a week or so ago, cutting around 25 per cent and a water witch showed water entering the hole at the cement job. The 7-inch combination string has accordingly been recemented through perforations at 7,298 feet and the well will be given another test some time during the forthcoming week. This well, the third producer to be finished in the San Miguelito Field of Ventura County, indicates a very substantial dip in the south flank of the structure as No. 2 Grubb was bottomed at 7,926 feet, as compared with No. 1 Grubb, which was finished at 7,152 feet. The latter well, incidentally, is at the present time flowing 1,074 bbls. of 30.5 gravity oil cutting 3 per cent and 900,000 feet of natural gas per day. The Chanslor-Canfield Midway Oil Co.'s No. 2-A Hobson was the first well finished in the San Miguelito Field, but the significance of the company's discovery was not recognized until completion of the Continental's No. 1 Grubb. It was originally believed that the Chanslor-Canfield Midway Oil Co.'s project was an outpost located in the extreme eastern end of the Rincon structure. The San Miguelito Field is located approximately midway between the Ventura Avenue Field on the east and the Rincon Field on the west.

Richfield

J. O. Seeple has successfully recompleted No. 3-A Brown in the Richfield district of Los Angeles Basin, after redrilling and deepening the hole to 3,274 feet and finishing the job with a 5¾-inch liner, including 86 feet of perforated. This rejuvenated producer, which was

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	August 19		August 12			
	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Intercoastal-domestic—						
Fuel oil	.....	.....	.....	.....	805,661	.....
Diesel and gas oil	.....	.....	115,495	16,499	1,200,559	324,883
Gasoline	215,807	30,830	532,029	74,576	6,586,289	5,358,902
Kerosene	.....	.....	5,925	846	508,895	154,373
Foreign exports—						
Crude oil	275,364	39,338	53,379	7,626	4,606,495	5,318,171
Fuel oil	271,442	38,777	162,981	23,283	5,196,855	5,492,267
Diesel and gas oil	.....	.....	39,070	5,581	2,222,548	1,615,172
Gasoline	76,599	10,943	217,679	31,09.	3,875,785	5,717,849
Kerosene	6,697	957	71,826	10,261	1,183,344	1,790,566
Naphtha distillates	.....	.....	.....	.....	.....	120,075
Coastwise-domestic—						
Crude oil	.....	.....	241,770	34,539	5,097,639	9,358,016
Fuel oil	118,659	16,951	342,965	48,995	6,372,911	7,781,036
Diesel and gas oil	16,640	2,377	4,111	587	821,145	800,830
Gasoline	228,252	32,607	305,988	43,713	8,119,534	10,042,128
Kerosene	11,351	1,632	.....	.....	136,937	105,369
Naphtha distillates	.....	.....	.....	.....	27,651	.....

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Diesel and gas oil	.....	.....	.....	.....	250,531	322,686
Gasoline	.....	.....	.....	.....	702,977	578,391
Kerosene	.....	.....	.....	.....	482,430	75,760
Lubricants	.....	.....	.....	.....	24,366	23,829
Foreign exports—						
Crude oil	22,032	3,147	.....	.....	1,346,850	707,651
Fuel oil	170,270	24,324	.....	.....	637,045	644,719
Diesel and gas oil	125,166	17,881	.....	.....	765,064	519,332
Gasoline	72,934	10,405	.....	.....	2,831,925	2,382,453
Kerosene	.....	.....	.....	.....	578,878	744,030
Lubricants	21,003	3,000	.....	.....	56,905	30,094
Coastwise-domestic—						
Fuel oil	168,323	24,046	.....	.....	2,246,161	1,975,815
Diesel and gas oil	.....	.....	13,088	1,880	179,250	243,691
Gasoline	44,813	6,402	139,982	19,998	2,674,041	2,391,138
Kerosene	2,551	364	4,309	616	85,106	80,467
Lubricants	.....	.....	.....	.....	2,751	.....

originally finished by the Associated in the Chapman zone and successfully produced for several years, was returned to production by Seeple flowing 275 bbls. of exceptionally clean 25.6 gravity oil per day. There are several other potential producers under way in the Richfield district at the present time and while completions will be rather infrequent during the course of the forthcoming 30 days, additional work will undoubtedly be undertaken if wells finished during this period register commercial production.

In the Dominguez Field of Los Angeles Basin, the Union and Shell each has one potential producer nearing completion, with the result that production tests are expected to be conducted by each company within the next 15 days. During the past week the Shell spudded in No. 47 Reyes and started rig construction for No. 48 on the same lease. During the same period the Union started drilling operations on No. 23 Hellman and is erecting rigs for No. 24 Hellman and No. 32 Callender. In the West Coyote Field the Standard failed to complete No. 53 Emery under a natural flow and has found it necessary to install a compressor. This new well, bottomed at 6,361 feet, but subsequently plugged back to 5,725 feet, was finished with an 8⅝-inch water string landed and cemented at 5,275 feet. In the Playa Del Rey Field the Ohio Oil Co. has started rig construction for No. 13, a new well to be drilled on the Recreation lease and spud is expected to be made within the next 10 days. The Union Oil Co. has reached a depth 3,450 feet in No. 4 Vidor, a new well which was spudded in a few weeks ago. Rotary drilling equipment is being rigged up in No. 16 Farwell, a new well started by the Union in the Santa Fe Springs Field, and the bit should begin making hole within the next 15 days.

Mountain View

The Shell Oil Co., barring the development of mechanical trouble, is expected to conduct a production test on No. 2 Porter Day, an offset to Dana Hogan's discovery well in the Mountain View Field of Kern County, some time within the next three weeks. The Shell, which will probably land a water string in No. 2 Porter Day shortly, has less than 400 feet to go before reaching the completion depth. Dana Hogan's discovery well, finished a few months ago, is averaging a little better than 400 bbls. of exceptionally clean 34.2 gravity oil per day. This operator recently suspended drilling operations on a wildcat on the Ladd property in Fresno County at 6,605 feet and transferred the crew in No. 2 Wharton, a new well which has been started in the Mountain View Field. In as much as the Shell's No. 2 Porter Day, an offset to Dana Hogan's No. 1 Wharton, is almost definitely assured of commercial production, operators are watching the outcome of work on the Barnsdall's No. 1 Mott in Section 31-30-29 .

The Union Avenue district of Kern County is expected to occupy a prominent position in the wildcat picture during the remainder of the current year, as this area appears to offer exceptional possibilities. The Alta Oil Co. has taken over the lease of L. L. White and associates in Section 6-30-28 and has erected a new rig preparatory to starting drilling operations. The Union Oil Co. recently acquired approximately 1,900 acres of potential oil land in the Union Avenue district and will probably drill a deep test before the current year draws to a close. The Union, due to its extensive leasing, will probably drill a test well irrespective of the outcome of the Alta Oil Co. The Comanche Point area, located at the extreme southeastern end of the Bear Mountain fault zone, has been relatively quiet during the past several weeks, although operators have been consistently acquiring acreage. The Comanche Oil Co. erected a rig in this area a month ago but no further work has been undertaken or any indication revealed as to when actual drilling operations might get under way.

Lost Hills-Belridge

The General Petroleum has started making new hole in No. 1 Berry, a deep test in the South Belridge Field of Kern County, but the bit at last reports was still in brown shale. This well was suspended several months ago at approximately 8,300 feet due to the enormous thickness of brown shale and the uncertainty as to how much additional shale must be penetrated before encountering the underlying Temblor. No. 1 Berry of the General Petroleum may possibly be carried down to the 10,000-foot level before completion as the company upon picking up the Temblor would be obliged to take a penetration of several hundred feet before conducting a production test. In the North Belridge Field the Associated has plugged back No. 4 Reward from 5,510 feet to 5,360 and is preparing to pull the liner in order to undertake remedial work due to water trouble. In the Lost Hills Field of Kern County the Associated, which is drilling a deep test in conjunction with the Richfield Oil Co., is rotating ahead in No. 1 Williamson in a hard brown shale at 5,475 feet.

Two new wells are being prepared for production tests in the Mount Poso Field of Kern County and both of them, No. 2 Glide of the Bern Oil Co. and No. 2 Vedder of the Ekoh Oil Co., should be tanking oil within the next 10 days. The General Petroleum is building a rig for a new well to be drilled on the Glide property in Section 21-27-28 and this project, together with Ed Richter's No. 2 Glide, should begin making hole shortly. In the Round Mountain district the Golden Bear Oil Co. has cemented a string of 8⅝-inch in No. 1 Rex at 1,687 feet and should consequently drill out and make additional hole during the forthcoming week. Drilling operations in the Fruitvale Field of Kern County are limited to work on one hole, the Kernco Oil Co.'s well No. 2 in Section 23-29-27. There is in addition to this new work a small amount of reconditioning work under way in the field.

Kettleman Hills

Drilling operations are expected to be resumed by Ed McAdams in the North Kettleman Oil & Gas Co.'s No. 1 Lillis-Welsh, a deep test which has been standing suspended in the Kettleman North Dome Field for the past 60 days at 10,944 feet. The Union Oil Co., which has been assisting the North Kettleman Oil & Gas Co. from time to time, has provided adequate finances to permit a resumption of work in this deep test located in the extreme western end of the Kettleman structure. The Union has been assigned a one-half interest in the Lillis-Welsh property in consideration for the financial assistance to be provided for the resumption of work. In addition to participating in any future production developed on the Lillis-Welsh property, the Union will benefit from an extension work, as the company holds a lease on several hundred acres located between the Lillis-Welsh property and the Huffman area. Operators are quite anxious for Ed McAdams to resume work as his initial deep test on the Lillis-Welsh property looked exceedingly promising just before the development of mechanical trouble which forced a suspension of work due to the lack of adequate finances to undertake corrective work. The Kettleman North Dome Association has staked a number of additional locations in the North Dome, with the result that several additional wells are expected to be spudded in some time during the next 60 days. Kanda's No. 4-20 J offsets property of the Standard in Section 19-21-17, while No. 78-20 J offsets a well on the Superior's Huffman property. No. 41-32 J offsets the Union's Amerada lease, while No. 72-2 P, another projected driller, is located adjacent to the Felix area. In the extreme eastern end of the field, the Kettleman North Dome Association has staked location for a new well to be drilled and designated as 36-36 Q.

The Ohio Oil Co. has staked location for a new wildcat to be drilled 2,310 feet north and 330 feet from the SE cor. of Section 31-31-26 in Kern County and rig material is expected to be placed on the ground some time within the next few days. This well is being started a little sooner than anticipated due possibly to the fact that the company is desirous of getting under way before the winter season sets in. This is particularly important because the Ohio's new test is located out in Buena Vista Lake, which may or may not be a lake, depending upon whether this section of Kern County receives its normal rainfall. For the past several years Buena Vista Lake has been more or less of a myth as the lake has been exceptionally dry. During dry seasons the bottom of the dry lake is planted to alfalfa, grain and cotton with satisfactory results. The Ohio's lease provides that Buena Vista Lake may be used as a reservoir during the flood season or flooded at intervals to stimulate the production of farm products and consequently the Ohio is anxious to get under way before the seasonal rainfall sets in. It is interesting to note in this connection that rig construction differs somewhat from that in use in the Texas and Mid-Continent areas. It has been the practice of California operators to locate the base of the derrick a few feet above ground, in contrast with the elevated base of rig used for drilling purposes in the Mid-Continent area. Because of the possibility of being submerged in the Buena Vista Lake, the Ohio will use a so-called stilted derrick as the construction of the derrick base at an elevation will eliminate the necessity of digging a California sub-cellar and remove the possibility of being flooded out in the event that rains during the forthcoming winter may be above normal. As a matter of fact the type of derrick used in Texas and Mid-Continent fields permits more efficient operation and is coming into more favor in California as time goes on. Several California operators have adopted this practice as it eliminates the drilling of cellars and promotes increased efficiency of the mud pumps and has certain other inherent advantages. Harry Bergman's well No. 1, a wildcat located in Fresno

(Continued on Page 67)

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Palm Ridge Oil Co., No. 1 Palms, Los Angeles Co.	2- 2-15	5,550	repair mach.
Kupfer, A. M., No. 1 Inglewood, Los Angeles Co.	17- 2-14	5,863	suspended
Pacific Gulf, No. 1 Athens, Los Angeles Co.	19- 3-13	6,094	suspended
Pacific Dev. Co., No. 1 Wilmington, Los Angeles Co.	16- 3-13	rig	suspended
Pacific Oil Inv. Co., No. 1 Wilmington, Los Angeles Co.	25- 4-13	3,640	cleaning out
Sunrise Pet. Co., No. 1 Dominguez, Los Angeles Co.	2- 4-13	4,680	hd. sd. drilling
Oakes & Mead, No. 1 Lyndwood, Los Angeles Co.	21- 2-13	4,940	cleaning out
Celito Oil Co., No. 1 Monterey Park, Los Angeles Co.	25- 1-12	5,300	resume work
Community Oil Co., No. 1 Montebello, Los Angeles Co.	24- 1-11	5,321	suspended
Universal Consd., No. 1 Montebello, Los Angeles Co.	5- 2-11	7,013	recemented
Andrus & Hutcheson, No. 1 El Monte, Los Angeles Co.	11- 1-11	1,792	suspended
Signal Pet., No. 1 Puente, Los Angeles Co.	14- 2-10	4,908	plug 3,700 ft.
Willetts Pet., No. 1 Saugus, Los Angeles Co.	35- 5-16	2,074	suspended
Alpha Oil Co., No. 1 Calabassa, Los Angeles Co.	22- 1-13	1,199	suspended
Ball, W. T., No. 1 Newhall, Los Angeles Co.	34- 3-16	3,583	suspended
Big Four Oil Co., No. 1 Newhall, Los Angeles Co.	32- 4-16	2,230	suspended
Marble, Willard, No. 1 Van Nuys, Los Angeles Co.	6- 2-16	2,410	suspended
Plymouth Oil Co., No. 1 West Coyote, Los Angeles Co.	24- 3-11	1,010	sd. drilling
Vaqueros Major Oil Co., No. 1 Huntington, Orange Co.	tideland	mtl.	build. pier
Nuoli Co., No. 1 Newport, Orange Co.	29- 6-10	3,995	hd. sd. drilling
Mineral Exploration, No. 1 Capistrano, Orange Co.	8- 8-7	4,302	suspended
Saddleback Oil Co., No. 1 El Toro, Orange Co.	3- 6-7	80	suspended
Placentia Dev. Co., No. 1 Placentia, Orange Co.	31- 3-9	450	cemented
Brown, W. F., No. 1 Atwood, Orange Co.	25- 3-9	rig	rigged up
Spindle Top Oil Co., No. 1 Salton Sea, Riverside Co.	25- 7-10	3,590	test WFO
Great American Pet., No. 1 Chino, San Bernardino Co.	18- 2-8	3,660	repair mach.
Great American Pet., No. 2 Chino, San Bernardino Co.	18- 2-8	1,270	sd. sh. drilling
McCarthy, C. F., No. 1 Chino, San Bernardino Co.	14- 3-6	803	sd. sh. drilling

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Standard Oil Co., No. 1 Goleta, Santa Barbara Co.	20- 4-28	4,086	to set pipe
Monterey Expl. Co., No. 1 Pt. Concepcion, S. Barbara Co.	33- 5-33	2,195	sd. sh. drilling
Bolsa Chica, No. 1 Coal Oil Point, Santa Barbara Co.	tideland	4,089	suspended
Meganos Oil Co., No. 1 Purisima, Santa Barbara Co.	25- 8-34	rig	rigged up
Cuyama Oil Co., No. 1 Cuyama, Santa Barbara Co.	12-10-27	2,337	suspended
Woodrow Pet., No. 1 Rincon, Ventura Co.	4- 3-24	7,392	cleaning out
Bardeen Pet., No. 1 Fillmore, Ventura Co.	13- 4-19	3,140	sd. sh. drilling
Hancock Oil Co., No. 1 Fillmore, Ventura Co.	13- 4-19	2,300	sd. sh. drilling
Oil Ridge Oil Co., No. 1 Fillmore, Ventura Co.	1- 4-19	....	road
Los Cerritos Pet., No. 1 South Mountain, Ventura Co.	17- 3-20	mtl.	building rig
Kneiper & Atha, No. 1 Barsdale, Ventura Co.	7- 3-19	316	suspended
Williamson & Donaher, No. 1 Simi, Ventura Co.	36- 3-18	588	sd. sh. drilling
Dabney, H. R., No. 1 Simi, Ventura Co.	22- 2-18	1,000	suspended
Continental, No. 2 Miguelito, Ventura Co.	23- 3-24	7,926	recemented
C.C.M.O., No. 3-A Miguelito, Ventura Co.	23- 3-24	4,166	suspended
Midlands Pet., No. 1 Ojai, Ventura Co.	9- 3-23	7,841	redrilling
Wilshire Oil Co., No. 1 Sulphur Mountain, Ventura Co.	20- 4-21	2,198	suspended
Kirk, W. A., No. 1 Sulphur Mountain, Ventura Co.	21- 4-21	350	hd. sd. drilling
Mosher, J. W., No. 1 Santa Paula, Ventura Co.	14- 3-21	4,498	br. sh. drilling
Las Posas Pet., No. 1 Los Posas, Ventura Co.	22- 3-20	4,801	sd. sh. drilling
International Oil Developers, No. 1 Conejo, Ventura Co.	32- 2-20	2,804	hd. sd. drilling
Hub Pet. Co., No. 1 Gould Hills, Kern Co.	22-29-21	6,840	suspended
Purman, T. H., No. 2 Gould Hills, Kern Co.	27-29-21	335	suspended
Casa Mira Oil Co., No. 1 Belridge, Kern Co.	29-28-20	4,471	br. sh. drilling
General Pet., No. 1 Belridge, Kern Co.	30-28-21	8,398	br. sh. drilling
Cumberland Oil Co., No. 2 Devils Den, Kern Co.	17-26-18	3,270	suspended
Holloway, A. S., No. 1 Devils Den, Kern Co.	11-25-18	1,848	suspended
Lincoln Pet., No. 1 Devils Den, Kern Co.	10-25-18	2,172	suspended
Hanna, Tom, No. 1 Devils Den, Kern Co.	25-25-18	3,516	suspended
Pyramid Hills Oil Co., No. 1 Devils Den, Kern Co.	24-25-18	4,140	fish D/P
Fowler, F., No. 1 Blackwell Corner, Kern Co.	15-26-19	3,170	suspended
Associated, No. 1 Lost Hills, Kern Co.	2-26-20	5,493	br. sh. drilling
Howells Bros., No. 1 Round Mountain, Kern Co.	32-28-29	1,080	hd. sh. drilling
Keno Pet. Co., No. 1 Lerdo, Kern Co.	14-29-27	4,531	suspended
Ohio Oil Co., No. 1 Buena Vista Lake, Kern Co.	X- X-	....	location
Seals, Fred, No. 1 Edison, Kern Co.	1-30-29	....	location
Caravel Pet. Co., No. 1 Edison, Kern Co.	19-30-30	1,801	suspended
Alta Oil Co., No. 1 Union Avenue, Kern Co.	6-30-28	rig	suspended
Shell Oil Co., No. 2 Mountain View, Kern Co.	29-30-29	5,490	O. S. drilling
Hogan, Dana, No. 2 Mountain View, Kern Co.	29-30-29	821	sd. drilling
Bankline Oil Co., No. 1 Mountain View, Kern Co.	4-31-29	4,882	br. sh. drilling
Barnsdall Oil Co., No. 1 Mountain View, Kern Co.	31-30-29	4,806	hd. sh. drilling
Long Beach Pet., No. 1 Mountain View, Kern Co.	29-30-29	3,973	sd. sh. drilling
Mohawk Pet., No. 1 Mountain View, Kern Co.	30-30-29	5,958	suspended
Mohawk Pet., No. 2 Mountain View, Kern Co.	30-30-29	3,901	sd. sh. drilling
Mohawk Pet., No. 3 Mountain View, Kern Co.	30-30-29	rig	rigging up
Comanche Oil Co., No. 1 Comanche, Kern Co.	15-32-29	rig	suspended
Badger Oil Co., No. 1 Wheeler Ridge, Kern Co.	31-11-19	4,360	D/P stuck
Gatton & Luethe, No. 1 Madera, Madera Co.	22-10-17	2,390	suspended
Ruas Oil Synd., No. 1 Kingsburg, Fresno Co.	20-12-11	2,702	gr. sd. drilling
Bergman, Harry, No. 1 Kingsburg, Fresno Co.	12-12-11	4,150	700 B/D water
Graham & Loftus, No. 1 Raisin City, Fresno Co.	26-15-18	5,906	suspended
Emerich Oil Co., No. 1 Mendota, Fresno Co.	35-13-12	3,840	suspended
Western Gulf, No. 1 S. P., Fresno Co.	3-17-15	4,307	sd. sh. drilling
Hogan, Dana, No. 1 Joaquin Ridge, Fresno Co.	28-20-16	6,605	suspended
Superior Oil Co., No. 1 Jacalitos, Fresno Co.	6-22-16	1,622	sd. sh. drilling
Kent & McDonald, No. 1 Carrizo Plains, S. Luis Obispo Co.	3-32-22	3,830	suspended
Paso Robles Oil Co., No. 1 Edna, San Luis Obispo Co.	27-27-11	4,191	suspended
Guess, E. B., No. 1 Corcoran, Kings Co.	7-21-21	6,197	suspended
Brown, A. M., well No. 3, Kings Co.	10-23-19	1,205	suspended
Knudsen & Schmidt, No. 1 Reef Ridge, Kings Co.	36-23-17	5,873	suspended
Magee & Stone, No. 2 Alpaugh, Kings Co.	33-24-22	3,149	plug 2,710 ft.
Cardinal Oil Co., No. 1 Los Banos, Merced Co.	26-10-9	rig	rigged up
Merced Oil & Gas, No. 1 Chowchilla, Merced Co.	2- 9-16	rig	suspended
Na-Pa Oil Co., No. 1 Griffith, Napa Co.	7- 8-3	3,742	br. sh. drilling
Oakdale Oil Co., No. 1 Oakdale, Stanislaus Co.	5- 2-10	4,815	hd. sh. drilling
Pacific Northern Oil Co., No. 1 Guinda, Yolo County	23-12-3	4,994	gr. sd. drilling
Buttes Oilfields Co., No. 1 Marysville, Sutter Co.	35-16-1	2,721	gas—shut in
Buttes Oilfields Co., No. 2 Marysville, Sutter Co.	34-16-1	3,550	sd. sh. drilling
Tehama Pet. Co., Well No. 1, Glenn Co.	4-22-5	4,696	cemented
Orland Synd., No. 1 Orland, Tehama Co.	31-23-3	3,748	suspended

Possible New Field East of Government Wells; Deep Test Planned in the Los Olmos Pool

By B. D. STEVENSON
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Sept. 4.—The most important happening in the Laredo district the past week is the showing of gas estimated at 40,000,000 feet on drill stem test in Conway & Campbell's No. 1 Hoffman in Survey No. 114, about 5 miles east of the Sarnosa Pool of the Government Wells trend. The core had an odor of oil but the test showed dry gas. This test is the most likely looking prospect for a new field in a trend to the east of the Government Wells trend there has ever been. The only production to the east is the Driscoll Pool of three producing oil wells completed two or three years ago and located 15 miles south of this and 12 miles east of the south end of the Kohler Pool.

Earlier in the year Stanley Smith drilled No. 1 Pena in Survey No. 79, 10 miles northeast of the Conway & Campbell test and 7 miles east of the North Government Wells Pool and at 1,910 feet got considerable gas but the well later went dead. A test drilled 1,500 feet southeast of No. 1 Pena went much deeper but was a failure and the S.S.&H. Oil Co.'s No. 1 Hunter, 660 feet west of No. 1 Pena, is now standing at 1,930 feet.

Conway & Campbell set casing Thursday last and were due to test early this week. This test is about 1½ miles west of Plymouth Oil Co.'s No. 1 Hoffman in Survey No. 113, abandoned late last year at 3,512 feet, and is on acreage secured out of the Plymouth Oil Co. block. It ran about 80 feet higher on the Jackson than the Plymouth test. A verdict in the case of Conway & Campbell's No. 1 Hoffman is the most important thing to look forward to.

There is one other deal east of the Government Wells chain of pools and that is Eaton and others' No. 1 Herbst on a block in which Continental Oil Co. has a considerable interest. No. 1 Herbst was about ready to spud in the first of the week in Survey No. 71, about 3 miles east and 6 miles north of Conway & Campbell's No. 1 Hoffman.

North Government Wells

Navarro Oil Co. extended the North Government Wells another 660 feet to the north the past week with No. 16 Hahl, 1,320 feet north of the south line and 330 feet west of the east line of the northwest quarter of Survey 360. It came in for 30 bbls. hourly on three-eighths inch choke, which makes it a pretty good average well and indicates further possibilities to the north. No. 17, located 660 feet north of No. 16, had surface casing set the first of the week and tests in that country are drilled within a few days, so a further extension may be reported next week.

A dry hole is yet to be had indicating limits to the north and De Soto Oil Co.'s No. 1 Wood-Welder in Survey 211, 2½ miles north and a little east, is a gas well in the same sand, and No. 2, located 660 feet east of it, after drilling to 2,502 feet and finding nothing better, is coming back to 2,156 feet and will test there. It had a little showing of oil at that depth. O. W. Killam's No. 1 Wood-Welder in Survey No. 102, another mile north, was below 1,500 feet the first of the week, a further test of the trend in that direction.

Trends are all that are played in the Laredo district and any test that is reasonably in line is watched closely. The next thing on the north is in McMullen County, S. R. & C. Oil Corp. and Sinclair Prairie's No. 1 Reeves, and it is not looking encouraging. It found the Pettus sand dry at 2,066-69 feet and is drilling below that now. Another week will probably finish it. There are several other locations in McMullen County but none has started drilling yet.

The south end of the North Government Wells Field with a lot of proven and undeveloped acreage did nothing of importance the past week. Magnolia made a location in the northwest corner of Survey No. 61 which is evidently entirely proven acreage. The test next watched for is Smith & Story's No. 5 Lundell in the northeast corner of the south half of the southwest quarter of Survey No. 48 and it was getting ready to start the first of the week. It is a half mile or more southwest of production.

Starr County

Sun Oil Co. got the sand in No. 2-A Guerra in northwestern Starr County at 2,216-28 feet, compared to 2,208-32 feet in the discovery well a half mile west and set casing and was last reported waiting on cement. This looks like the third producer in the field. No. 1-C a half mile south of No. 1-A is a gas well and No. 1-A discovery well makes a big volume of gas and about 15 bbls. of oil an hour when opened.

Nothing else has started up around the Sun block other than the Sun's tests except the W. A. Smith location a mile west and Scarp Oil Co.'s (D. C. DeWitt) No. 1 Lopez in Jim Hogg County several miles to the north.

Around the Jeffries-Lambeth new discovery 10 miles northeast of Rio Grande City Shankle a mile north and a little east, Harrison a mile southeast and Goodwin & Yantis 2 miles northwest have been reported for over a week as ready to spud in.

As to the other discovery in the Rio Grande County, Chancellor & Hall's No. 1 Garcia in the extreme southwest corner of Hidalgo County with a good showing of oil at 3,179-87 feet, the understanding was casing was to have gone out late last week with the expectation that it would be set. Before the well reached its present condition Chancellor & Hall made a deal with the drilling crew and the landowner to take the test down and there are rumors that some litigation may develop which may greatly delay the completion.

Some tests have been started in the Los Olmos Pool with the idea of going to deeper pay but with light rigs they have stopped at only a little below 2,000 feet. Tarver and Nance are now starting a test with a good sized rig capable of going deep and it will be of especial interest for that reason.

Balcones Fault Zone

Boler's No. 1 Kearney in Bexar County, 15 miles southwest of San Antonio, that got a good core in the Edwards lime at 1,469-72 feet and created a lot of excitement is to be given another trial. It was reported abandoned when it made water but this was an error. Packer was set above the Edwards and the Edwards failed to show water. Casing is set at 1,451 feet in the Georgetown 18 feet above the Edwards and the water may have come from that or from breaks in the second-hand casing.

A packer was lost in the hole which caused a lot of delay but this has been fished out and Halliburton set and cemented 4-inch casing and line at the top of the Edwards and new tubing with wall packer will be set and a test made this time that it is thought will leave no room for failure and make a clean test of the Edwards lime.

Anticipating that if it is a producer it will be an edge well the owners have made location for No. 1 Milburn about 1,200 feet west of it and the probability is that it will be drilled even if No. 1 Kearney should make sulphur water. The location would be towards the fault and ought to get the Edwards a trifle higher than in No. 1 Kearney. No. 1 Kearney was expected to drill in and test on Tuesday.

Frio County

Of the various operations in the Balcones fault zone Amerada Petroleum Corp.'s No. 1 Doering in southwestern Frio County was at 4,006 feet late last week with over 2,000 feet more before getting the Edwards.

In the northeast end of the zone C. J. Webster Oil & Gas Co.'s No. 1 Fulps in Caldwell County was at 1,380 feet at the close of the week with some boiler trouble and not expecting to start up before the first of this week. By the end of this week it should be in the pay at below 2,000 feet. It is a little east of No. 1-A McCrory which made a crevice well producer. Webster has two other locations in the immediate vicinity and is expecting to develop the proposition.

Other than the Webster development around No. 1-A McCrory the interest in that section of the Balcones turns to two new locations. One, L. E. Trout's No. 1 McKey in the southeast corner of the Green DeWitt Survey, has been staked out 3,400 feet from the south line and 4,000 feet from the east line of the survey. The other is a test that will be drilled by W. J. Walton and H. H. Weinert on the Sorrell tract in the southwest corner of Guadalupe County on a block of acreage belonging to the Sinclair Prairie Oil Co. Both will be Edwards lime tests and important tests. The Trout location is about 4 miles southwest of nearest production in the Darst Creek Field.

Wildcat Operations in Southwest Texas

Week Ending September 2

Company, well, farm name, section and block—	Remarks:
ATASCOSA COUNTY	
A. Blume's No. 1 Shaw, 690 ft. from N line, 1,780 ft from E line of 100-ac. tract in W. Farquhar Sur. No. 275	T.D. 1,996 ft.; abd.
E. C. Burton's No. 1 Smith-Mowinkle, 2,100 ft. from N line, 200 ft. from W line of F. Peres Sur. No. 172.	T.D. 690 ft.; standing.
BASTROP COUNTY	
I. E. Emanuel's No. 1 H. Klemm, 511 ft. from W line 306 ft. from S line of tract in R. S. Teal Sur.	T.D 850 ft; standing.
Ca-Tex O. & G. Dev. Corp.'s No. 1 Harris, 150 ft. from NW line, 3,000 ft. from SW line of John Maxmillan Sur.	T.D. 2,370 ft.; swbd. dry.
Ca-Tex O. & G. Dev. Corp.'s No. 1 Pendergrass, 1,343 ft. from NE, 310 ft. from SE line of 130-ac. tract in Henry Warnell Sur.	Rigged up and S.D.
Three Oil Co.'s No. 1 M. Ingram, 1,250 ft. from SW line, 940 ft. from SE line of tract in M. Morgan Sur.	Derrick.
BEE COUNTY	
Holland Oil Co.'s No. 1 Copeland, NE cor. of 400-ac. tract in Pace Sur.	Spudded in.
BELL COUNTY	
Gus Winston et al's No. 3 Warrick, 100 ft. N of James Scoggins' No. 1 Warrick, in Elijah Ingram Sur.	T.D. 1,046 ft.; pulled csg. and S.D.
R. S. Wilson's No. 1 Davenport, 200 ft. from W line, 700 ft. from S line of J. L. Herred Sur.	T.D. 1,062 ft.; standing.
BEXAR COUNTY	
O. N. Beer's No. 1 S. W. Kearney, 150 ft. from S and E lines of 28-ac. tract in S. C. I. Peres Sur.	T.D. 1,472 ft.; running 4-in. csg. and liner to set at top of Edwards.
A. M. Blume's No. 1 Ridder, 300 ft. from W line, 1,000 ft. from N line of tract in Sur. No. 58, County Blk. 1,596	T.D. 581 ft.; drlg.
F. J. Von Delden et al's No. 1 Frank Webber, 150 acres in J. Montes No. 6	T.D. 40 ft.; spudded in and S.D.
Dingman's No. 1 Cassin, 175 ft. from N, 120 ft. from W line of 1,350-ac. tract in Rodriquez Sur.	T.D. 1,473 ft.; top Edwards; coring; tested sulphur wtr.
Austin Hull's No. 1 Classen, 268 ft. from W line, 2,500 ft. from S line of tract, 12 miles N of San Antonio.	T.D. 1,810 ft; trying to run csg.
LaSalle Oil Co.'s No. 1 City Sewage farm, 150 ft. S of Rilling Road, 450 ft. W of NE cor. of tract in D. Bustillos Sur.	T.D. 75 ft.; drlg.
C. J. LeCompte's No. 3 R. Diaz, 150 ft. from S and E lines of 30-ac. tract, Diaz farm lots, Nos. 1 and 2.	T.D. 1,450 ft.; drlg.
C. J. LeCompte's No. 4 R. Diaz, 324 ft. NE of No. 1	T.D. 320 ft.; S.D.
Motes-Campbell's No. 1 Pruitt, 550 ft. NE of Trusselis' No. 1 Pruitt, 54 varas from E line of tract in Samuel McCullough Sur.	T.D. 1,065 ft.; S.D.
Motes-Campbell's No. 1 Stumberg, 990 ft. from N line, 450 ft. from W line of F. Rolen Sur. No. 48	T.D. 1,135 ft.; bailing and pumping.
Motes-Campbell's No. 2 Stumberg, 450 ft. from N line, 450 ft. from W line of S. Stumberg 140-ac. tract in F. Rolen Sur. No. 48	T.D. 400 ft.; drlg.
George L. O'Neill's No. 1 Neimann in Juan Montez Sur. No. 6	T.D. 347 ft.; drlg.

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FIRST BLUE EAGLE WELL

CORPUS CHRISTI, Tex., Sept. 4.—The NRA Blue Eagle flew over the Hurlbut Southwest Poenisch's No. 1, 8 miles south of Corpus Christi, as the well was spudded in. It is the first well in the area to be drilled in conformity with the National Recovery Act.

Four crews of five men each were put to work on the job in place of the usual 10 men.

Eight Wells Add 12,000 Barrels to Michigan; Issue Eighteen Permits to Drill During Week

By PAUL A. ELLIOTT
Staff Correspondent, Michigan Fields

MUSKEGON, Mich., Sept. 4.—Eight new completions added more than 12,000 bbls. of flush production to the Porter Pool, Midland County, already under limited proration in the Mount Pleasant area, and opened a new small producer in the Oceana Field of western Michigan this week.

Pure Oil Co. brought in three large producers, two of which approached an initial of 5,000 bbls., in the Dundee pay sands in Section 17-13n-1w, Porter Township. No. 1 Howard, NE NW SE Section 17, flowed between 200 and 250 bbls. an hour when it came in making about 4,800 bbls. in 24 hours. This well is a south offset to McClanahan Oil Co.'s No. 1 Hathaway, considered the best well in the State because of its sustained production since completion as a 5,000-bbl. producer.

No. 1 Whitney, NW NE SE Section 17, made about 200 bbls. an hour for an open flow estimated at 4,500 bbls. for the first 24 hours. Because of proration it was pinched in to about 1,500 bbls. a day.

Pure's No. 5 Naramore, NE SE SW Section 15, flowed 120 bbls. an hour for an estimated initial of about 2,500 bbls. It is a direct west offset to No. 1 Baxter, which made only 450 bbls. initial recently. Two small wells good for about 100 bbls. a day also were completed in Porter Township.

Gordon and Stewart's No. 3 Richmond, NE SE SW Section 22, and Stork Oil Co.'s No. 1 Hill, NW SW NE Section 22, will make about 100 bbls. natural but probably will be increased with treatments of acid. No. 3 Richmond made about 300 bbls. in the upper Traverse recently as one of the few wells in the Mount Pleasant area showing possible commercial production at this level. It was later drilled to the Dundee but went to water in the upper formation.

J. Mark Harvey's No. 1 Farmers State Bank, SE SW SE Section 8, had several hundred feet of oil in the hole when drilled about 20 feet into the pay sands but struck water at 38 feet in. It will be plugged back and probably will make a small producer.

H. C. Nelson's No. 1 A. Doolittle, NE SE Section 36-15n-17w, Hart Township, Oceana County, made about 20 bbls. on the pump after striking oil but little gas in the Upper Traverse pay sands at 1,896 to 1,913 feet. It is the fourth producer in a developing field and a north offset to No. 1 E. Mitchell, largest producer in the area.

James Flanagan's No. 1 D. Powers, NE NE Section 1-14n-17w, Shelby Township, a south offset to Flanigan's No. 2 E. Mitchell, another small producer, probably will be abandoned as a "duster" after striking bottom water.

Two or three other drilling wells are scheduled for completion in the vicinity of the Oceana producers next week.

Fred W. Turner's No. 1 Mahar, NE SE NE Section 26-12n-4w, Vernon Township, encountered a light show of gas at 35 feet in the Dundee but had not yet struck oil at 37 feet in. It is considered one of the most important of 30 wells drilling or proposed in the new Vernon Township development.

Mellon and Pollock's No. 1 McGuire, a gas test in Section 36, also is expected to be completed soon. Talbot Oil Co.'s No. 5 State in Section 11-14-2w, Greendale Township, Midland County, topped the Dundee at 3,498 feet and was to be drilled in this week. Stoddard and Darke's No. 1 Brown, SE SW NE Section 16-15n-3w, Denver Township, topped the Dundee lime at 3,731 feet and had been drilled more than 140 feet into the formation without production.

New Permits

Eighteen permits to drill, 17 in the Mount Pleasant area and 1 in the Oceana Field, were issued by the Oil and Gas Division of the Michigan State Conservation Commission, increasing the 1933 total to date to 268, compared with 184 for the entire year of 1932. The new permits increase the August total to 92, a record month for 1933.

New Isabella County permits follow: Tri Oil Co.'s No. 2 I. C. Slentz, NW NE SE Section 22-16n-4w, Vernon Township; V. M. Voorhees' No. 1 C. A. Smith, SW NE NW Section 30-16n-3w, Wise Township; Mellon & Pollock Oil Co.'s No. 1 Leo Smock, NW NE NE Section 26; No. 3 John Stough, SE SW SE Section 23, and No. 4 John Stough, NW SW SE Section 23, all Vernon Township; T. K. Busard's No. 2 James Sheehan, SE SW NE Section 26, Vernon Township; W. J. Bernier's No. 1 Leo P. Flood, NE NE SW Section 9, Vernon Township; and L. G. Thompson's No. 1 S. M. Calihan, NE NE SE Section 20, Vernon Township.

Six new locations in Porter Township, Midland County, are as follows: George G. Hanner's No. 1 Methodist Church, NE NE NW Section 17-13n-1w; No. 2 G. R. Hathaway, NE SE NE Section 17; No. 3 G. R. Hathaway, SW SE NE Section 17, and No. 4 G. R. Hathaway, NW SE NE Section 17; M. D. and R. A. Wells' No. 1 Walter G. Williams, NE NE NW Section 27; and C. L. Greening's No. 1 Frank Nietzke, NE NW Section 28.

Three other Midland County locations include L. G. Thompson's No. 1 J. Shirts, SW NE SW Section 17-14n-2w, Greendale Township; Columbia Oil & Gas Co.'s No. 3 F. H. Tauker, NE SW SW Section 7-1wn-1w, Lee Township, and Strange & Fortney's No. 1 Johanna Tohm, SW NW NE Section 8, Lee Township.

Drilling has been started on James Flanagan's No. 3 E. Mitchell, SE SE Section 36-15n-17w, Hart Township, Oceana County, the eighteenth new permit of the week.

Proration of all wells making 1,000 bbls. a day or more was placed in effect in the Porter Township area where new production has far exceeded pipe line facilities because of many large new wells completed during the past six weeks.

Pure Oil Pipe Line Co. placed this partial system of proration into effect a few days after it was proposed in a meeting of representative producers. The Simrall Pipe Line Co., subsidiary of Roosevelt Refining Co., established a similar schedule. Pure is taking 100 per cent production of any wells making less than 1,000 bbls. a day.

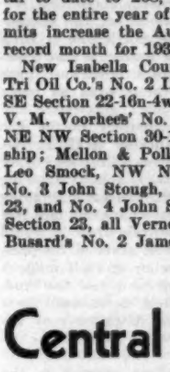
A proration committee composed of

(Continued on Next Page)

Central West Area Development Picking Up; Kentucky Shows Unusual Completion List

By GEORGE A. WHITNEY
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Sept. 4.—Development work is showing a pickup in the Central West Fields, comprising the Lima, Central Ohio, Indiana, Illinois and Kentucky Fields. In the Lima Field of northwestern Ohio, the best completion for the week was Upper Sandusky Oil & Gas Co.'s No. 1 on the Hildebrandt farm, Section 33, Crane Township, Wyandot County with an initial of 20 bbls. from the Trenton lime formation. In Monclova Township, Lucas County, Charles A. Tanner and others' test on the Charles B. Holloway farm, Section 7, was 1,925 feet. In Seneca County, Murphy and Son's No. 3 on the Clarence Fray farm, Section 6, Pleasants Township, is a light gas well at 1,400-1,525 feet. In Allen County, C. A. and F. J. Peavy's No. 8 on the C. A. Hoover farm, Section 24, Bath Township, produced 10 bbls. initial, and same parties are drilling No. 1 on the Mary Steele farm, Section 13, same township.



In Wood County, Ohio Oil Co. abandoned No. 29 on the E. B. Phillips farm, Section 33, Liberty Township, and No. 6 on the S. Hamman farm, Section 15 and No. 27 on the B. A. Lawrence "C" farm in Henry Township. Walter Hartman and others abandoned Nos. 4 and 5 on the G. W. Hartman farm, Section 34, Plain Township, and No. 5 on the Albert Avery farm, Section 34, same township.

In Wyandot County, Toledo Drilling Co. is drilling No. 2 on W. P. Reile farm, Section 13, Salem Township. Keiner and others are drilling No. 4 on the Louisa Brandt farm, Section 34, Crane Township. Robert W. Kirk and others are drilling No. 2 on the B. C. Root farm, Section 29, same township. Upper Sandusky Oil & Gas Co. is starting No. 5 on the Oscar J. Weiker farm, Section 28.

CENTRAL OHIO

Four completions were reported from the Central Ohio Field, two being oil wells and two gas wells. In Medina County, Preston Oil Co.'s No. 5-1,528 on the L. A. Severcool farm, Lot 4, Chatham Township, produced 21 bbls. initial in the Berea sand from 265-319 feet.

In Knox County, H. E. Perkins' No. 2 well, on the H. E. Perkins farm in Lots 13 and 18, Monroe Township, is a gas well at 2,580-84 feet, as the Berea sand failed to show gas.

In Coshocton County, Preston Oil Co.'s No. 1-1,522 on the Cary D. Harris farm, Section 17, Perry Township, had an initial of 25 bbls.

In Tuscarawas County, Lyons & Piefer's No. 5 on the J. H. Weaver farm, Section 5, Fairfield Township, is a gas well at a depth of 4,916 feet. Fry and others are reported at 4,800 feet on the H. B. Gobert farm, Section 7, same township.

In Licking County, Ridgeway Oil Co. is drilling No. 2 on the Bessie F. Hoyt and others farm, Section 17, Perry Township. In Fallsburg Township, the Blue Rock Oil & Gas Co. is drilling No. 5 on the W. D. Booth farm, Section 14, and Upham and others are drilling on the V. L. Smith farm, same section. Everette Gas Co. has a rig in for No. 5 on the Felix Claypool farm, Section 7, Hanover Township, same county. Wehrle Gas Co. is drilling below 2,150 feet on the O. E. Kreager farm, Section 10, Franklin Township, same county.

In Fairfield County, City Natural Gas Works is drilling No. 3 on the Lewis Krile farm, Section 3, Berne Township. Same company has a rig up for No. 1 on the James Keister farm, Section 8, Pleasants Township, same county, and for No. 5 on the Cyrus B. Ricketts farm, Section 12, Berne Township, same county. Same company is drilling No. 2 on the Lorenza Shaffer farm, Section 13, Goodhope Township, Hocking County, below 2,250 feet.

In Lorain County, Wittmer Oil & Gas Co. is drilling below 2,500 feet in No. 1 on the H. W. Ingersoll farm, Lot 86, Grafton Township, and same company is drilling on the Cleveland Quarries property, Lot 19, Lagrange Township, same county.

In Summitt County, East Ohio Gas Co. is drilling below 3,300 feet in No. 3 on the Everett Bexler farm, Section 17, Green Township. Same company is drilling on the Mrs. F. Snider farm, Section 30, same township.

In Portage County, Johnson and others are drilling below 4,400 feet on the Gail King farm, Lot 39, Charlestown Township, and Brendel Producing Co. is drilling on the W. J. Lynn farm, Lot 50, Deerfield Township, same county. In Trumbull County, Johnson and others are drilling below 4,400 feet on the William M. Kain farm, Lot 59, Newton Township.

Starke County, the most active development area of the Central Ohio Field, has a large number of drilling wells and rigs up as well as new locations staked. There are 3 locations, 4 rigs and 25 wells drilling, a total of 35. No new completions were made during the week although a number are nearing the pay sand. Among them are: East Ohio Gas Co.'s No. 1 on the Stewart Bixler farm, Section 9, Plain Township, drilling below 4,000 feet; Brendel Producing Co.'s No. 1 Joseph H. McDowell farm, Section 16, same township, is drilling around 3,400 feet; No. 1 A. and L. Stephens farm, Section 9, same township, below 3,950 feet; No. 1 V. L. Nye farm, Section 10, below 3,200 feet, and No. 5 Lillian Shoemaker farm, Section 5, same township, below 2,700 feet. White and others are drilling below 3,600 feet in No. 1 on the Forest Hill

Cemetery, Section 20, same township, and No. 1 on the Jacob Isler farm, Section 25, is drilling around 3,500 feet. Stoltz and others are drilling below 4,100 feet in No. 1 on the Lynhurst Addition, Section 17, Plain Township, same county.

Cable and Campbell are spudding on the Levi A. Stoner farm, Section 20, Plain Township, Starke County. East Ohio Gas Co. is spudding in No. 1 on the Edward H. and Bertha Styer farm, Section 10, same township, also spudding in No. 1 Charles Pontius farm, Section 16, same township. Brendel Producing Co. is moving in a rig for No. 1 on the Alfred E. Nockwalt farm, Section 17, same township.

INDIANA

One of the best wells in Indiana for some time was recently brought in by the Big Four Oil & Gas Co. in No. 2 well, 330 feet from the north line and 600 feet from the east line of the Robert E. Huey farm, SW Section 18, Washington Township, Gibson County, which showed an initial of 160 bbls. from 1,200-80 feet. In the same township, the Gib-Van Oil & Gas Co. is drilling No. 6 on the Agnes Haskins farm, SE Section 18, same township.

In Patoka Township, Gibson County, Ohio Oil Co. abandoned No. 1 J. S. Dickson No. 1 farm, SW Section 2; No. 1 John Geiser farm, SW Section 2; No. 1 Charles E. Knight, SW Section 2; No. 3 W. F. Knight farm, SW Section 2; No. 2 Lucey E. Knight farm, SE Section 3; No. 1 J. S. Smith No. 1 farm and No. 1 Kate Jones farm, both in the SE Section 3, Patoka Township.

In Pike County, Washington Township, Harry N. Bell's No. 2 well, 330 feet from the north and east lines of the J. and C. Shea farm, SW Section 17, was a gas well from 1,017-23 feet, and No. 3, same farm, is drilling. Same party is drilling No. 1 on another of the J. and C. Shea farms, Section 19, same township. Charles C. Taliaferro, Jr. is drilling No. 1 on the M. Bradfield farm, Section 7, same township. In Jefferson Township, same county, Indiana Southwestern Oil & Gas Co. drilled a dry hole in the northeast corner of the Otto Thomas farm, SW Section 15, at a total depth of 1,130 feet. In Logan Township, H. E. Merrifield abandoned his No. 1 on the B. Shafer farm, NW Section 23, same county.

ILLINOIS

In Wabash County, Wabash Township, B. F. Wirebach and others on the C. Keyer farm, SW Section 6, was dry at 1,120 feet. Ohio Oil Co. abandoned No. 2 on the W. J. Shick farm, SE Section 5, same township.

In Dennison Township, Lawrence County, Ohio Oil Co. abandoned No. 14 on the R. L. Ryan 160 acres, and abandoned No. 1 on the Freemont School District No. 33, in Section 23, same township and county.

KENTUCKY

During the week more wells were completed in the Kentucky fields than for any week for months, and from now on additional work will be done in several of the counties.

In Ohio County, Dewey, Huff and others' No. 1 on the Burdette farm, in the Lyona district of the county, produced an initial of 20 bbls. White & Calderwood's No. 1 Wright farm, in the same district, was dry in the Jett sand at 370 feet. Same parties are drilling No. 1 on the Henry Beckett farm, same district.

In Daviess County, Courtney Combs and others' No. 1 on the Robert Wilson farm, in the Red Hill district, reported for 100 bbls. initial. Same parties' No. 1 on the Perry Thomas farm, is reported with an initial of 35 bbls. Three Sands Oil Co.'s test on the J. B. Orick farm, in the Jones Pool, was dry. Thompson, Sargent and others' No 1 on the Edward Bennett farm, was reported dry. I. C. Huff and others' No. 1 on the Rollie Ambrose farm, in the Cane Run Pool, is reported with an initial of 50 bbls. at 780 feet. Same parties' No. 1 on the Jess Ambrose farm, same pool, reported at 20 bbls. at a depth of 785 feet, and No. 2, same farm, is drilling. Vickers and others' test on the Nettie Meller farm, same pool, was dry at 775 feet, as was John Ross and others' No. 1 on the Chancellor farm, same pool, at 770 feet. White & Calderwood are drilling on the Ray Staver farm, same pool.

In Hancock County, Arch Branberger and others' test on the Wright farm, in the Pellville area, was a dry hole and Jasper Oil Co. is drilling on the Haise farm. Steinberger, Lynch and others are drilling on the Jim Crow farm, in Lyona district.

In McLean County, Hupp & Duff's No. 5 W. D. Wright farm, produced 30 bbls. initial. Mike Callas and others' No. 1 on the Edward Wells farm, did 12 bbls. initial.

Michigan Fields

(Continued from Preceding Page)

Fred Stork, James C. Graves and Morris Yabrove was named at a special meeting of the Porter producers and pipe line representatives. The committee will meet weekly to determine the proration necessary based on a check of runs, pressure and pipe line facilities to be made by a special gauger.

Proration is unnecessary as yet in the Vernon Township Field, where Pure Oil Pipe Line Co. is running about 2,000 bbls. a day with facilities for about 1,600 bbls. more without laying any new lines.

A program to strengthen the Oil and Gas Producers Association so it may function under the NRA as representative of the Michigan industry was inaugurated at a special code meeting held in Mount Pleasant. The executive board was increased to nine members by the election of Howard Atha, James C. Graves and C. L. Maguire, of Mount Pleasant, and W. A. Hower, field superintendent of the Muskogeno Oil Corp., representing Muskegon and western Michigan fields. Other members are: President, Haswell Grant; secretary, Walter Russell; Ellsworth Brown, W. L. McClanahan and Robert L. Tope.

Mount Pleasant and other Michigan contractors favor a 48-hour week with six eight-hour days, declaring that the proposed 36-hour week would be disastrous. They agreed to put the eight-hour day with three shifts and no Sunday work into effect in September and named A. E. Faine, of Ohio, a member of the state and national code committees, to represent Michigan at a conference relative to drilling labor.

Central Michigan oil production exceeded 30,000 bbls. a day during the week, equaling a previous record established about a year ago with indications that it would reach 40,000 bbls. a day if pipe line facilities were increased to take the open flow of large new producers in the Porter Township Pool.

Pure Oil Pipe Line Co. established a new record of 23,000 bbls. on Saturday, August 26, exceeding by 2,000 bbls. any previous 24-hour period.

Open flow production of present wells would aggregate at least 35,000 bbls., it is conservatively estimated, judging by the proration in force on a number of producers capable of making more than 1,000 bbls. a day.

When figures for August, 1933, are compiled, a new monthly record, exceeding that of 744,000 bbls. set in October, 1932, is expected to have been set. The 1932 record was at the rate of 24,800 bbls. a day.

McClanahan Oil Co.'s No. 1 Hathaway, Section 17, Porter Township, brought in during the latter part of July, has produced more than 125,000 bbls. against a back pressure of from 150 to 250 pounds, setting a new Michigan record for any one well.

Well in West Virginia Produces More Than 5,000 Bbls. in Five Days; Now 790 Daily

By STAFF CORRESPONDENT

PITTSBURGH, Pa., Sept. 4.—The advance in the Pennsylvania grade crude structure returns crude prices to the November, 1930, level or an average of 95 cents a barrel above the low of this year. It is a necessary bid for a return to a higher level of production. Production figures have been lagging behind the required refinery demand, and have in no district of the lower fields, as yet, returned to the November, 1931, base. For September, 125 per cent of that base is allowed and in some districts an attempt is being made to increase production.

A spectacular increase for a Pennsylvania grade well was made in Boehm and Strickler's No. 3 in the Lost Run Pool, Clay district, Ritchie County, West Virginia. It was reported as flowing 10 bbls. an hour natural in the top pay of the Injun sand as soon as the sand was struck. The hole was deepened and began flowing at the rate of 50 bbls. an hour, and produced 1,083 bbls. the first day from the lower pay. The second day it reached a peak of 1,600 bbls. and produced in excess of 5,000 bbls. during the first five days. At present it is flowing about 790 bbls. a day.

The operators are Frank Finley and others, drilling as the Boehm & Strickler Oil Co., on a lease mapped as the Boehm and Neeley farm, near Ellenboro. The second test on this farm is now flowing at the rate of 200 bbls. a day. No. 3 is about 400 feet north of No. 2. On the L. E. Robinson farm, No. 3 of the Hinton Farm Oil Co. increased to about 100 bbls. a day.

Drilling in this pool, the most productive of recent years, is but one well at the present time. It is the test of the Richards Farm Oil Co. on the Michael Moran farm, on which one test on the western edge proved dry. Smith and others have made a location on the C. H. Fredrick farm.

Completions increased in the Eastern Fields during the week. Ten gas wells, four producers with an initial production of 27 bbls., and three dry holes were reported.

WEST VIRGINIA

No producers were completed in West Virginia. Completions consisted of seven gas wells and two dry holes. The best gas well was the second test of Bode and Stoffle on the John Coyle farm in Murphy district, Ritchie County. It was drilled in the Injun sand at a depth of 2,105 feet and is showing for over 1,000,000 feet a day.

In Calhoun County, two wells were completed. Creed Barker and others completed a test on the I. B. Fowler farm in Sherman district in the Injun sand at 1,937 feet, showing for about 200,000 feet a day. In Sheridan district, Chemical Oil Co. completed a test on the E. B. Yoke farm in the Berea sand, a gasser rated at 100,000 feet a day.

In Gilmer County, on the waters of Trace Fork of Tanner Creek, Clem S. Morris completed a test on the Cora B. Gainer farm in the Injun sand at 2,105 feet. It will make a light gas well. It is in Dekalb district.

In Kanawha County, Marshall and Price completed No. 9 on the Goshorn and others lease of 1,118 acres in Elk district in the Weir sand at 1,883 feet. It is showing for about 60,000 feet a day before shot.

In Lincoln County, Turtle Lick Gas Co. completed a second test on the George Thompson farm in Jefferson district. It is rated at about 176,000 feet a day from the Berea sand at 2,457 feet.

In Wayne County, Natural Gas Corp. of West Virginia completed a test on the Henry Adkins farm in Union district in the Brown shale at 3,341 feet. It is showing for about 300,000 feet a day.

In Boone County, Yawkey Oil & Gas Co. drilled No. 13 on the Pond Fork Coal Co. lease in Crook district through the Berea to 2,872 feet. It was dry and is being abandoned.

In Clay County, the test of Godfrey L. Cabot on the Bell Creek Land Co. tract proved dry. It is in Pleasant district, and was drilled through the Big Injun sand to 3,151 feet.

Drilling in West Virginia

In Boone County three wells are drilling, all by Pure Oil Co. Its test on the A. M. Prichard lease is down 2,108 feet. No. 60 on the Federal Coal Co. tract has reached 1,873 feet, and No. 62, same lease, is drilling at 1,080 feet. All are in Sherman district. In Kanawha County, No. 41 of Godfrey L. Cabot on the A. H. Huntington lease has reached 2,115 feet. It is in Cabin Creek district.

In Tyler County, J. N. Jones is drilling on his own property in Meade district. In Pleasants County, Albert Neeley and others are down 1,025 feet in a second test on the Oliver Gorrell farm in Union district. L. C. White and others are drilling No. 3 on the State Farm in the same district, and Dinsmoor & Co. have a rig standing on the Lavina Jones farm.

In Ritchie County, Clem S. Morris and others are about on top of the Injun sand on the Hiram Williams farm in Murphy district. In this district, Deem and Overton are down 1,710 feet on the R. A. Overton farm. J. F. Deem and others are drilling at 1,680 feet in a second test on the Mansfield Haught farm. Southern Oil Co. is fishing at 1,790 feet in No. 4 on the Alvin Wince farm which is being drilled deeper.

Calhoun County continues active. In Sherman district, F. F. McIntosh is spudding in on the O. S. Bennett farm. Lyle S. Ayers and others have started drilling on the Kate Garritson farm. McCall & Co. are down 850 feet on the White Hall farm. C. B. Lewis & Co. are rigging up for a second test on the W. T. Kelley farm. In Lee district, F. F. McIntosh has reached 1,725 feet in No. 3 on the S. A. Hays farm, and Lowther and Shumm are down 1,760 feet on the Rufus and Maude Mace farm. In Washington district, Grant Fowler is drilling at 1,850 feet on the Orval Postlethwait farm. In Center district, W. A. Bickerstaff has a rig standing for a second test on the Edward Gainer farm. In Sheridan district, Cain and Rothwell are on top of the Injun sand on the Lee Roy Jones farm. W. J. and O. L. Yoke are drilling at 660 feet in No. 3 on the A. T. Yoke farm.

In Gilmer County, McCall & Co. have completed a rig on the Lee Gainer farm in DeKalb district. A. E. Ellis and others are building a rig for a second test on the Ware and Webster lease, same district.

In Marion County, Victor Oil & Gas Co. reached 3,225 feet on the Charles H. Freeland farm in Mannington district and shut down testing the formation. In Monongalia County, the Chartiers Oil Co. is drilling at 2,400 feet on the Thomas Williams heirs farm in Clay district.

SOUTHEAST OHIO

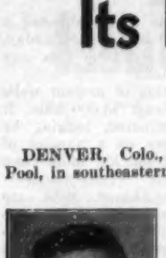
Three producers, one gas well and one dry hole were reported from Southeast Ohio. The best well was in the shallow

(Continued on Page 67)

Lea County, New Mexico, Well Nearly Trebles Its Production After Two Acid Treatments

By TOLBERT R. INGRAM
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Sept. 4.—The Lea Pool, in southeastern New Mexico, which has produced 6,000,000 bbls. of oil without a flowing well, has another completion in the Texas Co.'s No. 3-A Lynch, which increased its production from 100 bbls. to 270 bbls. after being treated with acid. Eddy County had a small completion in the Artesia area.



In Colorado, the Mountain Fuel Supply Co.'s No. 2 Florence Wilson, on the Hiawatha Dome, had a little gas and only a show of oil in 50-foot sand at 5,063 feet, and Rocky Mountain Gas Co.'s No. 1 Eberle, on the Craig Dome, missed the pay at 2,800 feet.

In Wyoming, three locations were reported in the Osage Field, the Ohio Oil Co. completed a small gasser at Allen Lake, and water was encountered in the Dakota on Hidden Dome.

In Montana, one location was reported in the Cut Bank Field, two wells showed some water and another is being completed with 2,000 feet of oil in the hole. The Hobson Dome in Judith Basin County is to have a test.

In Washington, a well drilled alongside the Leslie Petroleum Co.'s No. 1 Sims, which showed for a 15-bbl. well in 1931 at 805 feet, the first discovery in that State, is on top of the sand.

NEW MEXICO

Lea County

The Texas Co.'s No. 3-A Lynch, C NW NE Section 34-20-34, in the Lea area, tested 270 bbls. of oil plus 81 bbls. of water daily after being given its second treatment with muriatic acid, making a new gain of 170 bbls. over its output before treatment. The well was drilled to 3,745 feet and swabbed 100 bbls. of oil and 30 bbls. of water. It was then given a treatment with 250 gallons of of acid and the next test showed 201 bbls. of oil and 25 bbls. of water daily. It was again treated with 300 gallons with the results noted above. The Lea Pool is unusual in some respects. It has produced more than 6,000,000 bbls. of oil and is at present making around 2,200 bbls. daily, but there is no gas with the oil and the wells have been pumped from the beginning. The largest well made 1,700 bbls. initial. The Texas Co. is the principal operator and is developing its holdings slowly. The only well drilling at present is Cranfill & Reynolds' No. 4 State, C Lot 10, Section 2-21-33, drilling at 2,600 feet in salt.

The Carter and Continental Oil Co.'s No. 1 State, C NE NE Section 28-22-35, South Eunice area, is drilling at 3,854 feet in anhydrite.

In the Jal area, Western-Anton's No. 1 Conditt, C SW SW Section 12-25-36, is shut down for water at 1,775 feet in salt, and the Continental Oil Co.'s No. 2 McCallister A-24, NW NE NE Section 24-26-35, set the 13⅜-inch at 724 feet, mudding it in with 5 tons of mud, and is drilling at 1,025 feet.

Eddy County

Flynn, Welch & Yates' No. 66 State, NW SE SE Section 30-18-28, Artesia area, was drilled to 1,939 feet. It cut the oil sand at 1,905-17 feet. It was shot with 50 quarts and is cleaning out to test. Van P. Welch and others' No. 1 State, NW NE SE Section 22-17-28, is drilling at 920 feet.

Ralph Spearow and others' No. 1 McClellan, SW NW NE Section 22-22-23, Indian Creek, is shut down at 3,695 feet in black lime to adjust titles. The Pecos Valley Drilling Co.'s No. 1 McIntyre, NW NW Section 27-23-25, is drilling at 437 feet.

C. H. Lockhart and others' No. 2 Root, C SW SW Section 7-17-30, Maljamar area, is drilling at 2,715 feet and had shows of oil at 2,606-10 and 2,622-24 feet. The Grayburg Oil Co.'s No. 4 Burch, C SE NW Section 19-17-30, is drilling at 2,350 feet. The Western Drilling Co.'s No. 2-A Greene, C SW NE Section 29-17-29, Jackson area, is shut down for orders at 2,336 feet.

COLORADO

Moffat County

The Mountain Fuel Supply Co.'s No. 2 Florence Wilson, C NE NE Section 22-12n-100, Hiawatha Field, is drilling at 5,100 feet after stopping to test a show of oil and gas in a 50-foot sand at 3,063 feet total depth. The 8⅝-inch was cemented at 4,964 feet and test through tubing showed about 15,000 feet of gas and a little oil. Neither was in commercial quantities and drilling was resumed. Same company's No. 1 Wheeler, SE NW NW Section 30-12-100, is drilling at 1,305 feet and the Texas Co.'s No. 1 Van Schaick, SW cor. Section 19-12-100, has derrick completed and is moving camp buildings to location.

The Texas Co.'s No. 1 Iles Investment, SE NW Section 23-4n-92, Iles Dome, is redrilling to straighten at 1,340 feet. Total depth is 2,050 feet.

The Rocky Mountain Gas Co.'s No. 1 Eberle, SE SW SE Section 9-6n-91, Craig Dome, found a poorly defined sand at the 2,800-foot horizon and is drilling at 3,325 feet with the Morapas sand as the next objective. The 8⅝-inch was cemented at 2,768 feet on top of the horizon which yielded gas in No. 1 Bogenschultz, 1,500 feet to the east, and tested at a total depth of 2,830 feet. The horizon showed some water. A fault runs through the dome between the two wells.

William A. Myers' No. 1 State, NW SW SW Section 16-4n-101, Skull Creek, is reaming to bottom at 3,250 feet after pulling the 6¼-inch.

The Mountain Fuel Supply Co.'s No. 1 Hatch, SE NW SW Section 9-11n-101, Sugarloaf district, is standing at 3,519 feet waiting for heavier rotary equipment.

Rio Blanco County

The California Co.'s No. 1 California-Raven, C NW SE Section 30-2n-102, Rangely Dome, is shut down after a pumping test which averaged around 138 bbls. daily.

Fremont County

The Cherry Creek Placer Co.'s No. 1 Lucas, SW cor. NE Section 32-18-69, Florence district, is drilling at 2,687 feet in blue shale. The Waterville Oil Co.'s No. 1 State, SE cor. NW Section 16-18s-69, Phantom Canon, is drilling at 2,315 feet in sandy shale.

La Plata County

Phipps and others' No. 1 Government, SW NW Section 9-33-13w, Dry Mesa, set the 8¼-inch at 870 feet and shut down.

Park County

The South Park Oil Co.'s No. 1 Milligan, NE cor. SE Section 13-8s-76, Jefferson district, lowered the 4¾-inch to 3,041 feet and cemented and is drilling at 3,055 feet in sandy lime.

Weld County

The Ramsey Petroleum Corp.'s No. 1 Scriven, C NW Section 22-7n-59, Buckingham district, is building derrick and moving in equipment.

WYOMING

Weston County

Three new locations in the Osage Field are as follows: The Western States' No. 9 Julius Bock, CSL SE NW Section 14-46-64, is building standard rig, and same company's No. 10 Julius Rock, NW NE SW Section 14-46-64, is moving in materials for standard rig. The Federal Oil Co.'s No. 6 Government, CEL SE SE Section 15-46-64, is moving in materials.

The Chadron-Osage Oil Co.'s No. 20, SW SW Section 14-46-64, cemented the 8¼-inch and shut down, and its No. 22, NE SW Section 14-46-64, is drilling at 1,360 feet. Same company's No. 23, NW NE SW Section 14-46-64, cemented the 8¼-inch at 966 feet and is standing.

The Federal Oil Co.'s No. 5, SE cor. Section 15-46-64, is drilling at 800 feet and the Riggs Oil Co.'s No. 3, SE NE Section 16-46-64, is drilling at 2,500 feet. The Yellowstone Oil Co.'s No. 4 Butcher, SE NW NW Section 23-46-64, is drilling at 700 feet.

Crook County

The Baker Exploration Co.'s No. 1, NE NW Section 20-49-66, Kara district, is reported drilling at 1,000 feet with portable rotary outfit.

Niobrara County

J. M. Huber Corp.'s No. 2 Argo, NE SE SW Section 27-36-65, Lance Creek, is drilling at 3,633 feet. Ed Shogren and others are reported moving in materials for a test on Old Woman Creek in their No. 1, Section 10-36-63, east of the Lance Creek Field.

Converse County

The Continental Oil Co.'s No. 30 Glenrock Sheep, SW SE SE Section 4-33-76, Big Muddy, after cementing off water in the Sundance at 4,767 feet, total depth, plugged back to 4,200 feet and is cleaning out to 4,200 feet to test the Lakota.

Natrona County

The Triangle Oil Co.'s No. 3 Ames, SW NE SE Section 29-36-85, North Boone Dome, is moving rig from No. 2, which was completed for 2 bbls. per day in the Shannon sand at 630-70 feet.

Carbon County

The Ohio Oil Co.'s No. 2 A. J. Haslett, NE NE Section 34-23-79, Allen Lake, has cellar completed. This will be a test to the Sundance and probably the Pennsylvanian. Same company's No. 1 Knawha, SW NW NE Section 34-23-79, after running into water, plugged back to 1,754 feet and completed for 300,000 feet of gas in the top of the Morrison.

The Mutual Oil Syndicate's No. 5 Dutton Creek, NE NW SE Section 12-18-78, Dutton Creek, is drilling at 1,450 feet, and its No. 9 Dutton Creek, NW NE Section 12-18-78, is drilling at 4,250 feet.

M. K. Quealy's No. 1 Albert, SE SW Section 17-25-79, Shirley Hills, is moving in materials for a test to the Pennsylvanian at 2,500 feet. Earl W. Reeder, Inc.'s No. 1 Union Pacific, C SW SW Section 19-20-83, Overland Dome, is drilling and underreaming the 10-inch at 2,370 feet and feeling for the top of the Frontier.

Sweetwater County

The Mountain Fuel Supply Co.'s No. 3 Poston, C NW NW Section 22-16-104, South Baxter Basin, is drilling at 2,250 feet.

Sublet County

The Corder Oil Co.'s No. 1, SW cor. NE Section 9-29-113, Dry Piney, which recently was taken over by a syndicate of Kemmerer men, is cleaning out at 2,710 feet.

Hot Springs County

The Empire State Oil Co.'s No. 4 Republic, NE cor. NW Section 14-44-98, Hamilton Dome, lowered the 10-inch to 1,575 feet and is cleaning out. Cavey ground is slowing up progress.

Washakie County

The Bales Oil Trust's No. 2 Brome, NE NW NW Section 31-48-90, Hamilton Dome, encountered sulphur water in the Dakota at 1,800 feet and is plugging back to the Frontier at 1,540 feet where it showed for a small pumper.

MONTANA

Carbon County

The Carbon Oil & Gas Co.'s No. 1 McMinn, NW SW SW Section 7-7s-22, Dry Creek, which last fall was showing oil and gas at 5,527 feet and looked as if it would be a commercial producer, is being reconditioned under the supervision of Charles E. Orchard, and Joe D. Cook, who with others, have taken over the operation. The well was deepened to 5,551 feet and ran into water. While running tubing, gas caught fire and burned the rig. It is believed that this well and No. 1 Armstrong, just to the north, which also drilled below the oil into water, can be made into producers if the bottom water can be shut off.

Glacier County

One location in the Cut Bank Field was reported in the Montana Power Gas Co.'s No. 1 Miller, SW NE NE Section 4-35-5w, in the gas area of the field.

The Alberta-Pacific Consolidated Oil Co.'s No. 2 Kiesel, SE cor. NW Section 11-34-6w, is bottomed at 2,793 feet and has 1,200 feet of water in the hole from sand at 2,760-70 feet. A. B. Cobb's No. 1 Walburger, SW cor. SE Section 35-34-6w, topped the Kootenai at 2,222 feet and is drilling at 2,420 feet, and the Dakota-Montana Oil Co.'s No. 2 Haglund, Sr., NE NE Section 14-34-6w, is drilling at 1,225 feet. W. M. Fulton and others' No. 1 Haggerty, NE cor. Section 16-34-6w, is trying to pull the 10-inch and has not yet been tested after a second shot at 3,040 feet, total depth. It is estimated good for 75 bbls. per day. The Consolidated Gas Co.'s No. 1 Ewing, C NE NE Section 3-34-6w, formerly carried as J. W. Johnson, topped the Kootenai at 2,300 feet and is drilling at 2,330 feet.

The Montana Headlight Oil Co.'s No. 1 Britton, NW SW NE Section 14-34-6w, is running the 6⅝-inch at 2,775 feet, total depth, to shut off water. The Montana Power Gas Co.'s No. 1 fee, SW cor. Section 1-35-5w, topped the Darling at 2,762 feet and cemented the 7-inch on bottom at 2,764 feet with 50 sacks. It had a good show of gas in the top of the sand. Same company's No. 1 Vermont Loan & Trust, on the

line between Sections 21 and 28-36-5w, cemented the 8⅝-inch at 2,960 feet with 50 sacks. It showed for 3,000,000 feet of gas in the Moulton sand at 2,685-90 feet.

The Santa Rita Oil & Gas Co.'s No. 1 Cardwell, C NE SE Section 15-35-6w, topped the Colorado at 515 feet and set the 12½-inch at 555 feet.

R. C. Tarrant's No. 2 Britton, SW NW SE Section 14-34-6w, is rigging up, and his No. 1 Carman, C NW NW Section 19-34-5w, is still a location. Tarrant's No. 3 Haglund, Jr., C SE NE Section 13-34-6w, is drilling at 2,020 feet, and his No. 1 Larson, C SW NE Section 12-34-6w, is drilling at 1,250 feet. Tarrant's No. 1 Williams, NW cor. NE Section 11-34-6w, has 2,000 feet of oil in the hole at 2,860 feet. The Stewart sand was cut at 2,767-95 feet, and the Darling at 2,830-54 feet.

The Texas Co.'s No. 1 Fisk, C NW NE Section 14-35-6w, is standing cemented at 2,931 feet, on top of the sand. The Yukon Oil Co.'s No. 1 Grueger, C SW SW Section 14-37-5w, is drilling at 2,544 feet.

Cut Bank production from June 1, 1932, to July 31, 1933, was 138,745 bbls. The largest month was July with 28,477 bbls. All the oil marketed up to this time has been moved from the field in trucks.

Judith Basin County

Fletcher E. Hunt is preparing to drill a 2,500-foot test in his No. 1 Lee Payne, C SW SW, Section 21-14n-15e, Hobson Dome, where he has 10,000 acres blocked up. Five sands will be tested down to 2,400 feet. Dean E. Winchester, of Denver, made the location.

Toole County

Pfabe & Engelking's No. 4, CWL SW SE, Section 19-35-2w, Kevin-Sunburst Field, was completed for 1 bbl. per day at 1,545 feet. The Agen Drilling Co.'s No. 1 Goddertz, NE SW, Section 26-35-3w, is drilling at 1,200 feet, and S. V. Day's No. 1 Halter, C NE NE, Section 17-35-2w, is drilling at 860 feet.

WASHINGTON

The Hoh River Oil Co.'s No. 2 Gilkey, Section 12-26n-14w, on the Hoh River structure in efferson County, has cemented the 6¼-inch on top of oil sand at 768 feet and is preparing to drill in. This company is successor to the Leslie Petroleum Co. which made a discovery on this structure, the first in Washington, on November 15, 1931, in its No. 1 Sims. This well made between 15 and 20 bbls. daily at 805 feet and increased to around 50 bbls. at a lower depth. It cut five sands in 1,200 feet of drilling. The hole was carried down to 2,155 feet where operations were suspended. Efforts to recover the oil through perforated pipe were not successful and the successor interests decided to drill another test alongside No. 1 Sims. This is the well now on top of the sand and is only a few feet away from the discovery. The General Petroleum Corp. is reported to be a joint operator, agreeing to pay bottom hole money.

The Prairie Forks Oil Co.'s No. 1 Rosalie, Section 9-28-13w, Forks district, Clallam County, is preparing to resume at 2,088 feet in an 8-inch hole after reorganizing and raising additional capital. William A. Broome and others' No. 1 Dennie-Boy, Section 19-17-28, Grant County, is drilling at 120 feet. The Wenatchee Valley Oil & Gas Co.'s No. 1 Watkling, Section 14-23-19, Chelan County, is fishing at 800 feet. The Northwestern Natural Gas Co.'s No. 6 Walla Walla, an old gas well in the Rattlesnake Hills gas field in Benton County, which is deepening for a test of lower horizons, is tied up at 1,274 feet with the drill stem in the hole. Four joints have been recovered. The Sheldon-Burton Co. has the contract. The Miocene Petroleum Co.'s No. 1, NE NW Section 17-12-19, Union Gap district, Yakima County, has resumed and is drilling at 3,000 feet in an open hole after pulling the 4¾-inch which was run to 2,000 feet last year to shut off water.

Important Wildcat Test on Rickert Structure; May Merge Sterling-Pacific and Royalite

By VICTOR LAURISTON
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Sept. 2.—An important wildcat test is being drilled on the Rickert structure in southern Alberta by Paramount Oils, Ltd., of Calgary. Recent unofficial reports state that the diamond drill test has entered the Madison limestone below 3,316 feet. Small shows of oil have been met in several horizons, with a further show reported at the lime contact. The shows were all noncommercial, but the oil was a high grade crude somewhat similar to those of the Turner Valley Field.

The Rickert structure is one of the structural folds in the Alberta foothills. It is some distance west of South Turner Valley, and almost due west of the new Mar-Jon producing area. Drilling indicates the lime is somewhat nearer the surface than in Turner Valley. Paramount's No. 1 started drilling several years ago, and was shut down for more than a year at 2,288 feet.

North Turner Valley

In the North Turner Valley Field, Model Oils' No. 2, LSD 16, Section 22-20-3w5, is reported drilling below 6,502 feet. The drill is still working in brown lime, and is nearly 1,000 feet in the Madison, with no additional production reported. A fair commercial production was met in the upper lime.

Central Turner Valley

In the Central Turner Valley Field, Okalta Oils' No. 4, LSD 8, Section 1-20-3w5, has recovered tools and cleaned out about 80 feet of caving. The test is making new hole below 1,100 feet and carrying pipe behind the tools.

New McDougall-Segur Oil Co.'s No. 6, LSD 11, Section 12-20-3w5, is still testing, but preliminary tests indicate a daily production of about 50 bbls. from the light crude horizon between 3,169 and 3,190 feet.

Mercury Tract

In the Mercury tract, South Turner Valley, Miracle Oils' No. 2, LSD 16, Section 5-19-2w5, has resumed with rotary tools after cementing 8-inch casing in the top of the lime at 5,971 feet, and is making new hole below 6,069 feet. Associated Royalties' No. 1, LSD 9, same section, is reported setting casing at 3,350 feet.

Farther south, Sterling Royalties' No. 1, LSD 1, Section 33-18-2w5, rotary test, is reported making new hole below 2,685 feet. Livingston Syndicate's No. 1, LSD 5, Section 34-18-2w5, is drilling and carrying casing below 2,520 feet.

Mar-Jon Section

In Section 28-18-2w5, Becker Syndicate's No. 2 Anaconda, LSD 15, is drilling below 4,200 feet, after setting 10¾-inch casing above the Home sand at 4,410 feet. Preparations are being made to handle possible production from the Home and Dalhousie sands. Merland Oil Co.'s No. 1 producer, to which the Becker test is an offset, struck a big pocket of wet gas in the Dalhousie sand at 4,770 feet for a short time flowing 30,000,000 feet a day with a substantial crude naphtha recovery.

In the same section, Mar-Jon Oil Co.'s No. 2, LSD 10, is drilling below 2,120 feet. Pacalta Oils' No. 1, LSD 7, is drilling below 2,000 feet. Publix Oil & Gas Co.'s No. 1, LSD 8, is drilling below 1,350 feet and will set 16-inch casing around 1,600 feet.

Among the newer tests in this section, Spooner's No. 5 Anaconda, LSD 1, will spud in some time in September. Sunburst-Mid-Royal's No. 1, LSD 14, is preparing to resume after cementing at 450 feet.

New Test Planned

R. P. Davis & Co. of Calgary have purchased acreage in LSD 16, Section 32-18-2w5, west of the Sterling-Pacific producers and northwest of the Mar-Jon and Merland wells. Almost immediately north are the Mercury wells in Section 4-19-2w5.

Far South Tests

In the far south end Union Drilling Co.'s No. 1, LSD 8, Section 21-18-2w5, is standing at 480 feet. Highwood-Sarcee Oils' No. 1, NE Section 21-18-2w5, is reported spudding in. Hoffar-Lundy Syndicate's No. 1, LS D13, Section 22-18-2w5, is making new hole below 3,200 feet after using approximately 40 tons of cement to overcome extensive cavings.

Turner Valley Dividends

Announcement of the impending payment by Royalite Oil Co. of a tenth dividend calls attention to the returns received from Turner Valley production. The first dividend from Turner Valley oil was paid by the old Southern Alberta Oil Co. 18 years ago. This company paid two dividends, and its subsidiary, Southern Alberta Refineries, Ltd., paid one dividend. Later they were both absorbed in the present Dalhousie Oil Co. Recent dividend payments were started in 1923 by Royalite Oil Co., which heads the list in respect to returns to its shareholders. Dividend payments by individual companies since 1923 are: Royalite Oil Co., $2,084,006; United Oils, $1,125,000; Home Oil Co., $800,000; Mercury Oils, $160,658; Model Oils, $75,000; Merland Oil Co., $75,000; Spooner Oils, $65,235; Widney Petroleums, $45,200; Wellington Oils, $40,600; McLeod Oil Co., $13,500; Sterling-Pacific Oil Co., $55,440. The total amount, including announced September payments, is $4,539,531.

Sterling-Pacific Operations

It is understood that there have been some negotiations with respect to the merging of Sterling Pacific Oil Co. in the Royalite Oil Co. The proposals involve taking over by Royalite of the Sterling-Pacific acreage in South Turner Valley, including two good producing wells. At the recent annual meeting the number of directors was changed to nine, the board now comprising: President, W. R. Blake Wilson; vice president, A. Donaldson; managing director and secretary, James W. R. McLeod; directors, Austin Taylor, Neil McQueen, B. M. McIntyre, J. L. Trumbell, Frank A. Stevenson. Mr. McLeod, the new managing director, visited Calgary and Edmonton recently and will later proceed to Toronto. The company is not drilling at present, but Sterling Royalties' No. 1 in LSD 1, Section 33-18-2w5, is being drilled by allied interests on acreage secured from the company.

Tests in the Foothills

In the old Oil City Field, southwestern Alberta, Oil City Royalties' No. 1, Section 30-1-30w4, is reported drilling in softer formation below 830 feet, with continued oil seepage.

In the forest reserve area west of Olds, Hunter Valley Oil Co.'s No. 1 McLaren, Township 31-10w5, is drilling in the Blairmore formation below 1,936 feet with casing set at 1,550 feet. No water trouble has been experienced and the log is running close to expectations. The test is expected to get the deep lime around 4,500 feet.

On the Moose Mountain structure, Graystone Consolidated Petroleums' No. 2 Signal Hill, LSD 9, Section 34-23-5w5, is reported redrilling below 1,335 feet.

Reserve Dome Test

On the Alberta end of the international Reserve Dome structure, Rialto Oils' No. 1, LSD 4, Section 15-1-9w4, is reported below 450 feet and setting 16-inch casing. The test has encountered a good water sand.

Twin River Operations

On the Twin River structure south of Lethbridge, Nordon-Roney's No. 2 Twin River, LSD 11, Section 2-2-20w4, is rigging up new equipment, following the fire. The crew will start fishing for the bailer, after which the well will be treated with acid. A 30-day production test will probably be made before any official announcement is given out. The test bottoms at 3,940 feet and has apparently a substantial gas flow from the Ellis-Madison contact and what looks like a fair commercial oil production from the top of the Madison.

Wainwright Field

In the Wainwright Field, B. T. Beaubier is supervising the refitting of the D. W. Beaubier wells for pumping.

Comrey Structure

On the Comrey structure, southeastern Alberta, D. A. MacDonald's No. 1 Northwest Co., Section 9-1-5w4, is rigging up south of Medicine Hat, and test is being drilled by the MacDonald interests under arrangement with Imperial Oil, Ltd., which, through the North West Co., controls some 7,600 acres.

Test on Watson Structure

In the southern foothills Raven Oils' No. 1, Section 20-9-2w5, on the Watson structure, will be completed by a syndicate headed by Dr. F. E. Sandercock of Calgary. The Watson structure was originally mapped by E. W. Watson. It extends along the southern Alberta foothills. Closure is shown in Township 12-2w5 and the structure extends almost due south to Township 9-2w5. From this point south there is another structure mapped by Watson extending below the Crow's Nest railway line, but which trends easterly.

Source Rock Petroleums, Ltd., holds acreage on the Watson structure, and its No. 1 test started work some years ago in LSD 13, Section 21-9-2w5, but has been standing at 60 feet. Southfield Petroleums, Ltd., also holds acreage but has done no drilling. West of the Watson structure is The Quaich, reported on some time ago by E. H. Cunningham Craig, which is to be tested this fall by British interests.

Saskatchewan Test

In southwestern Saskatchewan, Twin Cities Oil Co.'s No. 1, located some weeks ago south of Cummings, will spud in some time in September.

On the Dirt Hills structure, Highwood-Sarcee Oils' No. 2, LSD 8, Section 23-12-24w2, is reported resuming at 1,592 feet after repairing derrick wrecked by a storm.

British Columbia Drilling

In southeastern British Columbia, Columbia Oils' No. 1, Sage Creek Field, is reported drilling below 300 feet, and bailing between 5 and 15 bbls. of 50-degree crude from a shallow sand struck at 100 feet. The drill went through 78 feet of overburden to reach bedrock, so that the oil show was close to the surface. Oil tests around 50 degrees, pro-

ducing 58-degree gasoline and a residue of 38½-degree Diesel oil. A 1,000-bbl. tank has been brought in for oil storage and the shallow production will be used as drilling fuel in place of wood. It is planned to continue 15-inch hole to around 700 feet. The test is expected to go between 3,500 and 4,000 feet for commercial production.

New Brunswick Oil Production

Oil production from the Stoney Creek Field in New Brunswick though small shows a substantial increase for the first six months of 1933, totaling 4,887 bbls., against 2,860 bbls. in the same period of 1932.

Drilling in Ontario

In Kent County, Ontario, Olga Oil & Gas Co.'s No. 7, Earl Flook farm, Lot 19, Concession 8, Raleigh Township, is reported drilling below 500 feet. Location is 600 feet north of Olga's No. 6 and a similar distance from F. H. Stover & Son's No. 1 on the Flook farm.

In the Tilbury Field, Salina Oil & Gas Co.'s No. 4, Gifford farm, 1,200 feet west of Salina's No. 3 producer, is reported drilling. Southern Ontario Gas Co.'s test, drilled by Ralph Dawson in Lot 5, Concession 15, Tilbury East Township, has a small gas production in the Tilbury sand, and is shut down pending deepening or shooting. Harry Smith's test in Lot 3, Concession 15, is below 1,145 feet.

In Dover Township, Raleigh Development Co.'s No. 1, Stevens farm, Lot 2, front concession, is fishing for tools.

In Lambton County, Leo Wilson's No. 1 deep test, Lot 7, Concession 3, Sarnia Township, is drilling 8-inch hole below 800 feet.

Union Drilling

In the Dawn gas field, Union Gas Co.'s No. 67 is reported rigging up in Lot 24, Concession 9, Dawn Township. This is near the center of the field and 1,300 feet from Union's No. 7.

In the Ekfrid area, Middlesex County, Union Gas Co.'s No. 4, Lot 8, Range 2s, Ekfrid Township, is drilling below 1,200 feet.

Sparta Hills Wildcat

A new area in Elgin County is to be given a wildcat test. The area is in the Sparta Hills, south of St. Thomas, west of the Vienna and Richmond gas fields. It is in line with the D'Clute and Tilbury Fields farther west in Kent County. E. P. Martyn of St. Thomas, who owns a farm in the Sparta Hills area and was formerly for 15 years engaged in oil drilling in Texas and Oklahoma, is planning to drill on his property. The potential producing horizon is around 1,345 feet.

Continental in Quebec

Continental Gas Corp. of Toronto is reported negotiating for a substantial block of acreage in Quebec, on the north shore of the St. Lawrence, in a partially proven area east of Montreal and not far from the town of Joliette.

LEGAL

Notice of sale of oil and gas lease, Department of the Interior, General Land Office, Washington. Notice is given that the following described lands are offered to the qualified bidder of the highest amount offered per acre as a bonus for the privilege of leasing the land under Sec. 17 of the leasing act of February 25, 1920 (41 Stat. 437), at the royalty rate fixed in the standard lease form, copy of which may be procured from the Commissioner of the General Land Office: T. 23 N., R. 16 W., N.M., Sec. 29, Lot 3 (SW¼ NE¼), 54.93 acres; Sec. 32, Lot 2 (NW¼ NE¼), 54.40 acres. The successful bidder, when so notified, will be required to deposit cash or certified check on a solvent bank for one-fourth of the bid and pay the remaining three-fourths upon receipt of lease for execution. The successful bidder also shall agree in writing to the stipulations contained in the "Regulations Governing the Sale of Lands under Sec. 17 of the Act of February 25, 1920," approved September 22, 1922, copy of which may be procured from the oil and gas supervisor, Geological Survey, Federal Building, Tulsa, Oklahoma, or the Commissioner of the General Land Office, Washington, D. C. Sealed bids will be received in the office of the Secretary of the Interior up to 10:00 a.m. September 16, 1933. Bidders are warned against violation of the provisions of Sec. 55, U. S. Criminal Code, approved March 4, 1909, prohibiting any unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids in the discretion of the Secretary of the Interior. (Signed) Fred W. Johnson, Commissioner.

Kansas Fields

(Continued from Page 52)

were drilling at 155 feet in No. 24 Wick, SE NW NW Section 27-22-11.

Wright & Bailey's No. 1-A Swanson, SE NE SE Section 9-22-12, was shot in sand at 1,775-92 feet. The hole filled 1,500 feet with oil. It had not been tested.

Western Wildcats

National Refining Co. and others were rigging up rotary on a wildcat test, No. 1 Smith, C SE SW Section 2-23-29w, Finney County.

In Harvey County, Holbart Oil Co.'s No. 1 Hardner, SE SW SE Section 11-23-1e, a wildcat, had set 20-inch and 15-inch pipe and was drilling at 450 feet.

In the Burrton Pool, Reno County, Olson and the Shell Petroleum Corp.'s No. 2 Day, C NW NW Section 19-23-3w, had 2,000 feet of oil and 300 feet of water in the hole and was to be tested. It had showings of gas or oil at 3,291 feet, 3,335-40 feet, and 3,340-75 feet, total depth.

In Stafford County, Stanolind Oil & Gas Co.'s No. 2 Allen, SW cor. Section 31-22-11w, had a hole full of oil from Siliceous lime at 3,540-70 feet. It had not been tested.

Retail Gasoline Prices Advance 1 Cent in East

(Continued from Page 28)

probably go to 5 cents per gallon, with an advance in the spot market, probably to the full 5-cent level, looked for in the near future.

Solvents Advance

Effective August 29, leading eastern refiners announced an increase of one-half cent per gallon in mineral spirits and varnish makers' and painters' naphthas, bringing the market to 9½ cents per gallon, tank cars, f.o.b. refineries and terminals, and 13 cents per gallon for tank wagon deliveries.

This was the first advance in these products for some time past and with the market for crude and refined products showing a further firming up, it is indicated that solvents may again be increased in the near future. This week's advance was initiated by the Standard Oil Co. of New York, Inc., and was followed immediately by other sellers.

Lubs

Cylinder oils and bright stocks have failed to show the further expected advances, notwithstanding the increase in Pennsylvania crude oil made during the week. The failure of the lub oil market to continue its upward trend is attributed to a sharp falling off in demand as a result of the latest series of price advances.

European refineries are going in for cylinder oil production on a scale hitherto unapproached, it is reported here, and American refiners are faced with a drastic curtailment in their export volume, particularly in England and France.

Red and pale oils met with a moderately active demand throughout the past week with prices remaining unchanged on all grades.

Wax

The higher crude oil market has brought about increased firmness in paraffin wax, but no further price increases developed during the period under review. Domestic demand had sagged somewhat.

In the export division of the market it was learned that recent price advances on fully refined grades have tended to slow down buying considerably.

RUNS TO FRENCH REFINERIES

Crude petroleum runs to French refineries during the first six months of 1933 amounted to 7,242,613 bbls., compared with 2,335,583 bbls. during a like period of 1932. Production of refined products increased from 320,009 metric tons in the first six months of 1932 to 884,932 metric tons during the corresponding months of 1933.

Wildcat Operations in Southwest Texas

(Continued from Page 55)

Fred Perrenot's No. 1 Ruis, SE cor. of 82-ac. tract in F. Rowland (Rolen) Sur. No. 48 ..... T.D. 600 ft.; to set 8-in. csg.
H. A. Pagenkopf's No. 1 G. A. Goeth, 500 ft. from SE line, 600 ft. from SW line which is San Antonio River, Juan Montez Sur. ..... T.D. 960 ft.; resumed drlg.
Earl A. Post's No. 2 J. F. and F. X. Bilhartz, 150 ft. from N and E lines of 8 200 acres of 385-ac. tract in F. Boles Sur. ..... Moving in rig.
Roe & Day's No. 2 City Nat'l. Bank, 150 ft. from N and W lines of tract in I. Perez Sur. No. 15 ..... T.D. 300 ft.; drlg.
O. L. Ray's No. 1 Thos. Dillon, 2,800 feet from NW line, 1,750 ft. from most southerly SW line of de Luna grant in southern part of county ..... T.D. 630 ft.; abd.
C. A. Smith's No. 1 Palfrey ..... Showing some oil
C. A. Smith's No. 1 Henry Lamb, 750 ft. from N and E lines of Lamb farm, in de la Garza grant ..... T.D. 480 ft.; drlg.
F. E. Tegler's No. 1 Brackenridge, 578 ft. from S line, 2,284 ft. from W line of tract in Maria Gertrudis de Alaniz Sur. ..... T.D. 1,110 ft.; drlg.

BLANCO COUNTY

Blanco Development Co.'s (McGee) No. 1 A. J. Dittmar, 1,320 ft. from S line, 150 ft. from W line of George Evans Sur. No. 58, 4 miles NW of Johnson City ..... T.D. 630 ft. in lime; fishing.
Isham et al's No. 1 Lester ranch, 300 varas from N and E lines of Antonio Bandrand Sur., 8 miles NE from Johnson City ..... T.D. 230 ft.; drlg. lime.

CALDWELL COUNTY

Judge R. L. Batts' No. 2 Roebuck, 2,400 ft. from NE line, 1,200 ft. from SE line of tract in Arthur Swift Sur. ..... T.D. 2,158 ft.; bailed dry.
Cargill et al's No. 1 Brown, 1,600 ft. from E line, 330 ft. from S line of C. E. Brown 112-ac. tract, Dillard Cooper Sur. ..... T.D. 2,351 ft.; abd.
E. L. Hope and Joe Cole's No. 1 Mike August, 150 ft. from NE line, 165 ft. from NW line of tract ..... T.D. 1,900 ft.; drlg.
F. L. Thomson's No. 2 Lawler, 150 ft. from NW line, 450 ft. from SW line of road in J. H. Lawler 134-ac. tract in James Berry Sur. ..... Moving in rig.

DE WITT COUNTY

C. B. Bunte, Inc.'s No. 1 Emil Buckhorn, SE cor. of 120-ac. tract in Andrew Lockhart Sur., 2 miles SW from Lindeneau ..... Spudded in.
L. G. Wade's No. 1 fee, 6 mi. S from Yoakum, 620 ft. from NW line, 160 ft. from SW line of 35-ac. tract in Lavina Dunbar Sur. ..... T.D. 2,257 ft.; S.D.

DIMMITT COUNTY

Ed Anglin's No. 1 Dr. A. J. Fitch, 930 ft. from NW line, 2,100 ft. from SW line of Sec. 4 in F. Proctor Sur. ..... T.D. 1,150 ft.; running 6⅝-in. csg.; flowing S.W.

DUVAL COUNTY

T. J. Conway and C. A. Campbell's No. 1 W. K. Hoffman, 300 ft. from NW line, 1,650 ft. from NE line of Sur. No. 114 ..... T.D. 2,756 ft.; in sand 2,749-56 ft.; on D.S. test showed big volume of gas.
DeSoto Oil Co.'s No. 2 Wood-Welder, 660 ft. E of No. 1 (950 ft. from N line, 2,640 ft. from W line of Sur. No. 211 ..... T.D. 2,502 ft.; P.B. to 2,156 ft.
O. W. Killam's No. 1 Wood-Welder, 9,280 ft. from E line, 3,540 ft. from S line of Sur. No. 102 ..... T.D. 1,500 ft.; drlg.
S. S. & H. Oil Co.'s No. 1 Hunter, 330 ft. W of CEL of J. Poitevant Sur. No. 515 ..... T.D. 1,965 ft.; standing.
W. A. Smith's No. 1 Holzapfel, west central part of lease in 900 ft. W of NE cor. of Sur. 344 and 150 ft. from N line of Sur. No. 42 ..... T.D. 285 ft.; set surface csg.; W.O.C.
Almer Stewart's No. 1 Parr, 350 ft. from E line, 200 ft. from S line of 500-ac. tract in Poitevent Sur. No. 188 ..... Rigged up.
Whitting's (Semmes & Rogers) No. 1 Duval County Ranch Co., 1,500 ft. from S line, 2,143 ft. from W line of Blk. 21 of Sur. No. 196 ..... T.D. 180 ft.; drlg.
Whitting's No. 1 Duval County Ranch Co., 1,511 ft. from S line, 2,143 ft. from W line of Blk. 21, of Sur. No. 196 ..... T.D. 180 ft.; drlg.

FRIO COUNTY

Amerada Pet. Corp.'s No. 1 Frank Doering, 34 ft. from W line, 1,700 ft. from S line of Tract No. 7 in Maria Louisa Carranza Sur. No. 302 ..... T.D. 3,825 ft.; drlg. shale and lime shell.
J. E. Greenlee's No. 2 Burns, 150 ft. from W line, 1,800 ft. from S line of SE of 160-ac. tract, Castro Sur. No. 123 ..... T.D. 2,338 ft.; cored shale 2,332-38 ft.

GILLESPIE COUNTY

Powers et al's (Nixon-Dore) No. 1 Andrew Lindig, 18 mi. E of Fredericksburg ..... T.D. 1,025 ft.; shale.

GUADALUPE COUNTY

Clint Lanier's No. 1 L. D. Hill, 450 ft. from NW line, 1,450 ft. from NE line of George Allen Sur. ..... T.D. 503 ft. in shale.

HIDALGO COUNTY

Carl & Johnston's No. 1 Doughty, 137 ft. from S and E lines of Lot 11, Blk. 5 of Subd. of Indios Ranch Sur. in N. Hidalgo ..... T.D. 3,040 ft.; S.D.
Chancellor & Hall's No. 1 Garcia Land & Cattle Co., 150 ft. from W line of Porcion 42 and 150 ft. N of old Military Highway ..... T.D. 3,187 ft.; showing oil; setting csg.
Maxwell & Young's No. 1 King, 175 ft. from N and E lines of Lot 3, Blk. 16, Alamo tract ..... T.D. 875 ft.; drlg.

JIM HOGG COUNTY

Brooklyn Oil Co.'s No. 1 De La Garza, 660 ft. from N and W lines of Blk. 87 of Pippins Subd. of Randado Grant Sur. ..... T.D. 200 ft.; drlg.
Cole Pet. Co.'s No. 1 Vela and Pena Bros., 330 ft. from W line and on line between Blks. 80 and 81, White Subd. of Share 2, Sur. 588, of El Peyote grant ..... T.D. 2,706 ft.; abd.
D. C. DeWitt's No. 1 A. G. Lopez, 3,475 ft. from W line, 435 ft. from N line of Sur. No. 106 ..... T.D. 1,717 ft.; drlg.
R. F. Force's No. 1 Holbien, 150 ft. from N and W lines of Blk. 54, Sec. 9 of Holbien Sur. of Share 3 of Las Animas grant ..... T.D. 3,160 ft.; abd.

KENDALL COUNTY

E. W. Martin's No. 1 Houston, in F. Wright Sur. ..... T.D. 1,028 ft.; topped Pennsylvanian.

KERR COUNTY

J. E. Anderson's No. 1 J. D. Witt, 1,320 ft. from N line, 1,320 ft. from W line of Sec. 1,928, in Hamilton Sur., 4 miles S of Center Point ..... T.D. 1,800 ft.; black shale.
W. E. Clark's No. 1 Love, 660 ft. from N and W lines of Mrs. Cassandra Winn Sur. No. 1,759 ..... Dropped from report; leases sold to Evans & Gant.
Evans & Gant's No. 1 Love, 660 ft. S of S line of Sur. 1,597, 1,320 ft. from W line of Sur. 1,594 ..... T.D. 4,060 ft.; rigging up to deepen.
Van Duyn & Moore's No. 1 Nowlin, 2,000 ft. from E line, 2,200 ft. from N line of Jas. R. Bettner Sur. No. 99 ..... T.D. 924 ft.; resumed drlg.

LA SALLE COUNTY

Pacific Gulf Oils and C. B. Bunte's No. 1 Lastinger, C of NE of Sec. 507 ..... T.D. 1,130 ft.; drlg.
W. H. Wallace's No. 1 H. C. Yeager, 150 ft. from S and E lines of Sur. No. 95 ..... T.D. 1,560 ft.; drlg.

LIVE OAK COUNTY

Coquat, O'Neill & Phillips' No. 3 Sanger, 2,930 ft. from SW line, 330 ft. from SE line of Sur. No. 350 ..... T.D. 2,100 ft.; coring sand.

J. H. Durbin's No. 2 Marbach, 1,000 ft. from S line, 2,200 ft. from W line of S. Hays Sur. ..... T.D. 900 ft.; S.O. in Pettus sand.
Holland Oil Co.'s No. 1 T. J. Lynn, 175 varas from E line, 54 varas from N line of 272-ac. tract in Sur. No. 171 ..... Moving in rig.
Sheldon & Snider's No. 1 E. Terrell, 1,000 ft. from S and E lines in E. Jurdin Sur. ..... T.D. 1,525 ft.; dry and abd.

MAVERICK COUNTY

Wright & Stroman's No. 1 DeBona, SE cor. of No. 1.... T.D. 740 ft.; moved off Ry. to new location.

McMULLEN COUNTY

John V. Edwards' No. 1 J. T. Brown, 150 ft. from river, 150 ft. from NW cor. of Brown tract, E from Callihan ..... T.D. 934 ft.; drlg.
French Oil Corp.'s No. 1 Two Rivers Ranch, 330 ft. from N, 1,650 ft. from W line of 640-ac. tract in Sec. 66 ..... T.D. 2,021 ft.; abd. dry.
McDowell & Vierson's No. 1 Jefferson, 330 ft. from N, 990 ft. from W line of 640-ac. tract in Sur. No. 93.. Spudded in.
Shumway et al's No. 3 Shiner, 4 miles SE from No. 2 Shiner, 1,730 ft. from S line, 167 ft. from W line of Steinhardt Sur. No. 190 ..... T.D. 2,502 ft.; abd.
S. R. & C. Oil Corp.'s No. 1 Reeves, 1,650 ft. from S line, 330 ft. from E line of Francis Smith, No. 4 Sur. ..... T.D. 2,155 ft.; S.D. to repair boiler.
J. S. Suttle's No. 1 Lark, 150 ft. from N and W lines of Blk. 16, in E. W. B. Scrugham Sur. ..... T.D. 1,030 ft.; set csg.
Whisenant & Trenchard's No. 1 Martin, 990 ft. from NE line, 330 ft. from SE line of Sur. No. 138 ..... Spudded in.
Whisenant & Trenchard's No. 1 Martin, 1,650 ft. to E line, 2,310 ft. to S line of Sur. No. 105 ..... Spudded in.

MILAM COUNTY

Ed Clark et al's No. 1 Thomas Graves, 250 ft. from SW and NW lines of Jackson Hall Sur. ..... T.D. 800 ft.; in shale; standing.
Clark et al's No. 1 Hoppe, 450 ft. from NE line and 450 ft. from SE line of E. Hoppe 66-ac. tract in Juan Jose Acosta Sur. ..... T.D. 520 ft.; standing.

SAN PATRICIO COUNTY

George W. Scruggs' No. 1 Collins, 1,040 ft. from NE line, 700 ft. from SE line of Blk. 36, E. J. McGloin Sur. ..... T.D. 2,756 ft; changing to heavier rig.

STARR COUNTY

B.&B. Oil Co.'s No. 1 Crown Brick & Tile Co., 1,800 ft. S of State Highway No. 4 and 580 ft. from W line of Porcion 87, near La Puerta ..... T.D. 4,560 ft; fishing.
W. P. Chancellor's No. 1 A Guerra, 36,000 ft. from S line, 2,600 ft. from E line of Share No. 6 of San Jose Grant Sur., NE cor. of county ..... T.D. 2,640 ft.; drlg.
F. R. Cooper's No. 1 J. M. Martinez, 150 ft. to S and E lines of A.B.&M. Sur. No. 135 ..... T.D. 3,193 ft.; abd.
Great Plains Oil Co.'s No. 1 Sanchez, 660 ft. from W line, 330 ft. from S line of SE NW of Sur. No. 344 .. T.D. 2,350 ft.; drlg.
Goodwin & Yantis' No. 1 Kelsey Bass, 150 ft. from S and E lines of Blk. 8, Coast O. & G. Subd. of Secs. 2 and 3, Porcions 86-87 ..... Rigging up for 3,500-ft. test.
Goodwin & Yantis' No. 1 Seabury, 150 ft. from S and W lines of Sec. 107, Share No. 1, Porcion No. 107.... T.D. 2,095 ft.; drlg.; depth reported an error.
K. D. Harrison's No. 1 Garcia, 4,018 ft. from S line, 330 ft. from W line of Share 215, Porcion 90, jurisdiction Camargo ..... Rigging up.
R. D. Perkins & Hoffman's No. 1 E. A. Peffler, 3,090 ft. from W line, 2,480 ft. from S line of Sur. 933.. T.D. 55 ft.; spudded in; standing.
W. R. Shankle's No. 1 Garcia, 150 ft. from SW and NW lines of Blk. 33, Subd. N of Porcion No. 90.... Rigging up for 3,500-ft. test.

TRAVIS COUNTY

Franklin et al's No. 1-A Reimers, 1,200 ft. from SE line, 1,600 ft. from most southerly SW line of Sur. No. 55 ..... T.D. 461 ft.; S.D. in shale.
Holdin's No. 1 D. V. Collins, 6,192 varas from SE line, 10,440 varas from SW line of Santiago de Valle Grant Sur. ..... T.D. 865 ft; top Edwards 710 ft; fresh wtr.
Watson, Johnson & Brady's No. 2 Brady ..... T.D. 1,175 ft.; drlg.
Weaver & Osborn's No. 1 Will Reinhardt, 300 ft. from NW line, 1,200 ft. from NE line of Will Reinhardt 100-ac. tract in William Lewis, Jr., Sur. 2.... T.D. 100 ft.; drlg.

UVALDE COUNTY

Evans & Thompson's No. 1 Farris, 400 ft. from S and W lines of 635-ac. tract near center of John J. Hammond Sur. ..... T.D. 460 ft.; in chalk.
John Roberts' No. 3 Kincaid ..... T.D. 385 ft.; standing.

WEBB COUNTY

E. B. Madden's No. 1 Bruni, 150 ft. from E line, 230 ft. from S line of 105-ac. tract in Sur. No. 2,341.... Rigging up.
Danvers & Harrison's No. 1 Benavides, 2,490 ft. from E line, 2,497 ft. from S line of Sur. No. 669 ..... T.D. 2,340 ft.; coring.
Edwin M. Jones' No. 2 Callaghan, 330 ft. from S and E lines of C.C.S.D.&R.G.N.G. R.R. Sur. No. 1,211.... Rigged up and standing.
Merle Gunby's No. 1 A. M. Bruni, 1,352 ft. from W line, 325 ft. from S line of Sur. No. 857 ..... Drlg. wtr. well.
Grey Oil Corp.'s No. 1 A. S. Billings, 2,310 ft. from N line, 330 ft. from W line of Blk. 1, C.C.S.D.&R.G. N.G. Sur. No. 13 ..... T.D. 2,140 ft.; drlg.
Will Ohlhausen's No. 1 Moses Jones, 378 varas from E line, 516 varas from S line of 100-ac. tract in Sur. No. 1,640 ..... T.D. 850 ft.; standing.
Washabaugh & Roberts' No. 1 Bruni, 1,170 ft. from NE line, 150 ft. from NW line of E½ of 160-ac. tract in Sur. 139 ..... T.D. 2,502 ft.; abd.

WILLIAMSON COUNTY

Alexander Drlg. Co.'s No. 1 J. & G. Kreig ..... T.D. 800 ft.; drlg.
McLean et al's No. 2 R. C. Miller, 800 ft. to S line, 100 ft. to W line of tract, B. Manlove Sur. ..... T.D. 2,195 ft.; lowering 5 3/16-in. to 2,070 ft.
Wilson, Worley & Moore's No. 1 Mrs. M. E. Olive ..... T.D. 41 ft.; S.D.
R. S. Wilson's No. 1 Ritchey, 1,200 ft. from SE line, 200 ft. from NE line of F. B. Ritchey 98-ac. tract in Simon Miller Sur. ..... T.D. 2,250 ft.; abd.

ZAPATA COUNTY

J. C. Charver's No. 1 Bustamente, 330 ft. from N and E lines of 24-ac. tract in Share 24 of Las Comitas grant ..... T.D. 1,242 ft.; drlg
Hamilton, Brower & Crow's No. 1 Slator, 2,111 ft. from SW line, 1,980 ft. from SE line of Blk. 1, Subd. of Slator ranch in J. V. Borrego grant ..... T.D. 1,089 ft; standing.
Circle W. Oil Co.'s No. 1 M. Garza est., 623 ft. from NW line and 699 ft. from SW line of Blk. 30, C. A. Douglas Subd. of Charco de la India grant ..... T.D. 637 ft.; drlg.
J. P. Doyle's No. 1 I. Ramirez, 150 ft. from NW and SW lines of Blk. 15, Share 1, Porcion 18 ..... Spudded in and S.D.
O. W. Killam's No. 1 Bruni, Blk. 9, Sur. 181 ..... T.D. 1,932 ft.; abd.
Sarah Poppas' No. 1 Juan V. Cueller, Jr., 150 ft. from NE and SE lines of Blk. 8, Sur. 2 of Poppas Subd. of Por. 24 ..... T.D. 812 ft.; drlg.
A. C. Savoy et al's No. 1 Flores, 150 ft. from NW line, 206 ft. from NE line of Blk. 8, Share 1 of P. A. Richer Subd. of Porcion No. 36 ..... T.D. 2,404 ft; standing.
Stevens & Brown's No. 1 Alexandro Garcia, 660 ft. from SW line, 660 ft. from NW line of Blk. 6, Stevens & Brown Subd. of W 700 acres, Charco Redondo grant, A. Garcia tr. 18 miles SE of Zapata ..... T.D. 1,250 ft; standing.
Arthur H. Wray's No. 1 Gopher Trust Est., 300 ft. from NW line, 1,020 ft. from SW line, Blk. 14, Sur. 1, Fullerton Subd., Share 8, in J. V. Borrego Grant Sur. ..... T.D. 1,014 ft.; drlg.

ZAVALA COUNTY

Zavala O. & G. Co.'s No. 1 Gates, 1,320 ft. from N line, 1,320 ft. from E line of Hooper & Wade Sur. No. 13.. T.D. 6,054 ft; hole cleared; standing.

Southwest Texas Proven Areas

Week Ending September 2

CEDAR CREEK POOL—BASTROP COUNTY

Company, well, farm name, section and block—	Remarks
Marts & Beavens' No. 2 Reyes, 754 varas from NW line, 1,300 varas from SW line of Addison Litton Sur. No. 1	Comp. 150 bbls. daily.
Joe Mills' No. 1 Noss, 400 ft. to E line, 150 ft. S of 78-ac. tract in Addison Litton Sur.	T.D. 1,778 ft.; setting csg.

NORTH DALE POOL—BASTROP COUNTY

Chiquita Oil Co.'s No. 2 M. I. Harris, 300 ft. NW of No. 1, J. Maxmillian Sur.	T.D. 2,175 ft.; two treatments of acid; C.O.
Ogden & Reed's No. 1 Spradlin, 300 ft. from S line, 200 ft. from E line of 113-ac. tract in Grey Sur. ..	Rigged up; standing.

RIDDLE POOL—BASTROP COUNTY

Floyd Dodson's (and Muckelroy) No. 1 Duren, 45-ac., 300 ft. from NE line, 1,440 ft. from SE line of 100-ac. tract, Flynt Sur.	T.D. 2,424 ft.; S.D.
Ogden & Reed's No. 1 Talley, 150 ft. from NW line, 1,350 ft. from SW line of John Maxmillian Sur.	T.D. 2,127 ft; treated with 3 drums acid; standing.
Ogden & Reed's No. 1-A C. L. Riddle, 1,225 varas from NE line, 288 varas from NW line of Maxmillian Sur.	T.D. 2,276 ft; pumped 1 bbl. dly; to treat with more acid.

PETTUS POOL—BEE COUNTY

Mauldin's No. 4 fee, 430 ft. NE of No. 3, ¼ mile S from Pettus townsite	T.D. 2,880 ft.; drilled plugs.

ECKERT POOL—BEXAR COUNTY

Gatlin Oil Co.'s No. 16 I. A. Beck, 300 ft. from NW of No. 2 Beck	T.D. 703 ft.; bailing.
J. F. Harrison's No. 1 F. Gembler, 150 ft. from NW line, 460 ft. from NE line of 88-ac. tract in J. Montes Sur.	T.D. 435 ft.; resumed drlg.
Swearingen Oil Co.'s No. 14 Halbarcier, 700 ft. N of No. 3 on 93-ac. tract	T.D. 300 ft.; drlg.

WEBSTER POOL—CALDWELL COUNTY

C. J. Webster Oil & Gas Co.'s No. 2 Fulps, 150 ft. from E line, 225 ft. from S line of tract in John A. Neill Sur.	Starting to drill below surface csg.

NORTH KOHLER POOL—DUVAL COUNTY

Allen & Morris' No. 1 G. W. Sutherland, 165 ft. from N line, 165 ft. from W line, SW NE of Sur. 188. ..	T.D. 2,700 ft.; abd. dry.

NORTH GOVERNMENT WELLS POOL—DUVAL COUNTY

Al Buchanan et al's No. 4 Ellison, 330 ft. from N and W lines of (40-ac.) NE of NW of Sur. No. 44	Spudded in.
Central Producers, Inc.'s No. 7 Tuck & Johnson, 330 ft. from S and W lines of SE SW of Sur. No. 42	Rigging up.
A. L. Edington's No. 2 Lundell, 1200 ft. from N and E lines of S½ SE Sec. 48	T.D. 600 ft.; drlg.
Hester Bros.' No. 1 fee, 330 ft. from S and E lines of NE of Sur. No. 47	T.D. 200 ft.; fooling around.
Humble O. & R. Co.'s No. 11 Hahl, 990 ft. from N line, 330 ft. from W line (most southerly of N line and westerly of W line) in Sur. No. 74	T.D. 2,299 ft.; swbng.
Humble O. & R. Co.'s No. 1 Duval County Ranch Co., 330 ft. from S and W lines of NW cor. Sur. No. 362..	T.D. 1,923 ft.; drlg.
Magnolia Pet. Co.'s No. 2 Hahl-Southland, 266 ft. from N line, 185 ft. from W line of Sur. No. 61	Rigging up.
Navarro Oil Co.'s No. 8 Hahl, 2,960 ft. from S line, 330 ft. from W line of W½ of Sur. No. 360	Rigging up.
Navarro Oil Co.'s No. 16 Hahl, 3,630 ft. from S line, 330 ft. from E line of W½ of Sur. No. 360	T.D. 2,288 ft.; comp. 30 bbls. hrly. on ¾-in. choke.
Navarro Oil Co.'s No. 17 Hahl, 990 ft. from N line, 330 ft. from E line of Sur. No. 360	Set surface csg.; W.O.C.
Reynosa Oil Corp.'s No. 2-B Duval County Ranch Co., 330 ft. from N and E line of E½ SE of Sur. 363 ..	T.D. 2,267 ft.; comp. flowing 15 bbls. hrly.
Reynosa Oil Corp.'s No. 2-A Duval County Ranch Co., 330 ft. from S and W lines of N½ of SW of Sur. No. 362	T.D. 2,277 ft.; comp. 20 bbls. hrly.
Reynosa Oil Co.'s No. 3-A Duval County Ranch Co., 330 ft. from S line, 990 ft. from W line of N½ of SW¼ of Sur. No. 362	T.D. 1,815 ft.; drlg.
Reynosa Oil Co.'s No. 3-B Duval County Ranch Co., 990 ft. from N line, 330 ft. from E line of E½ of SE¼ of Sur. No. 363	Rigging up.
Smith & Storey's No. 4 Lundell, 150 ft. from S and E lines of SW of NE in Sur. No. 48	T.D. 2,288 ft.; on pump; comp. 75 bbls. daily.
Sun Oil Co.'s No. 5 Weiderkehr, 330 ft. from N and E lines of Sur. No. 361	Spudded in.
Southern Alkali Co.'s No. 2 Jane Schaller, 1,600 ft. from S line, 2,050 ft. from E line of Sur. No. 81....	T.D. 1,008 ft.; standing.

SARNOSA POOL—DUVAL COUNTY

L. W. Capps' No. 6-A Duval County Ranch Co., 330 ft. from SW line, 1,380 ft. from NW line of W¼ of Sur. No. 574	Rigging up.
S. R. C. Oil Co.'s No. 9 Duval County Ranch Co., 4,-330 ft. from S line, 375 ft. from E line of Sur. 293..	T.D. 850 ft.; drlg.
Sun Oil Co.'s No. 6 Cuellar, 720 ft. from SW line, 330 ft. from SE line of E¼ of Sur. No. 576	T.D. 2,420 ft.; 75 bbls. daily.
Texas Co.'s No. 4 W. C. Riggs, 990 ft. from S line, 330 ft. from E line of E½ of NW of Sur. No. 46..	T.D. 2,306 ft.; comp. flowing 90 bbls. daily.
Texas Co.'s No. 4-A Duval County Ranch Co., 330 ft. from SE line, 413 ft. from SW line of N¼ of Sur. No. 574	T.D. 2,804 ft.; abd.
Texas Co.'s No. 5 W. C. Riggs, 1,667 ft. from S line, 330 ft. from E line of E½ of NW¼ of Sur. No. 46..	T.D. 1,085 ft.; drlg.

SARNOSA POOL—DUVAL COUNTY

Sun Oil Co.'s No. 2 Cuellar, 150 ft. from SW-SE lines of E¼ of Sur. No. 576	Abd.

SANDIA POOL—JIM WELLS COUNTY

Crude Oil Royalty Co.'s No. 1 Allen, 150 ft. from N and E lines of Blk. 2, Subd. of Wade ranch	T.D. 2,643 ft.; dropped from report till work is resumed.

NORTH PETTUS POOL—KARNES COUNTY

Begol Oil Co.'s (Gulf Coast Oil Co.) No. 6 McKinney....	T.D. 2,663 ft.; drlg. plugs.
Magnolia Pet. Co.'s No. 2 Porter-State, 660 ft. E of No. 1 Porter, 24 ft. from W line, 1,650 ft. from S line in M. A. Porter Sur.	T.D. 980 ft.; drlg.

JACOB POOL—McMULLEN COUNTY

Loma Oil Co.'s No. 15-A Jacob, 660 ft. N of No. 14 Jacob	T.D. 950 ft.; set csg.; drill in Saturday.
Longhorn Oil Co.'s No. 3-A Lark, 450 ft. from N line, 150 ft. from W line of Blk. 14, of Subd. of Lark land in E. W. B. Scrugham Sur.	T.D. 800 ft.; drlg.
Kennon & Stephenson's No. 1 Lark, 150 ft. from N and W lines of Blk. 15, subd. of Lark land in E. W. B. Scrugham Sur.	T.D. 1,033 ft.; set csg.; W.O.C.

CUEVITAS POOL—STARR COUNTY

Sun Oil Co.'s No. 2-A Guerra, 1,980 ft. fron. N and W lines of Las Cuevitas Sur.	T.D. 2,238 ft.; set csg.; W.O.C.
Sun Oil Co.'s No. 1-C Guerra, 4,861 ft. from NW line, 660 ft. from NE line of La Sactosa grant	T.D. 3,190 ft.; comp. 40,000,000 ft. of gas.
Smith & Storey's No. 2 Sarah Lloyd, 79 ft. from E line, 150 ft. from S line of Blk. 14, Sur. No. 28....	T.D. 2,509 ft.; abd.

LOS OLMOS POOL—STARR COUNTY

Tarver & Nance's No. 8 Kelsey Bass, 150 ft. from N and W lines of SW SE Sec. 7, Pors. 75, 76, 77, jurisdiction Camargo	T.D. 350 ft.; drlg.

MOCA POOL—WEBB COUNTY

Moca Oil Co.'s No. 6 Duval County Ranch Co., 1,360 ft. from N line, 320 ft. from W line of Blk. 32, of Zapata County School Land Sur.	T.D. 892 ft.; comp. 100 bbls. dly.

ESCOBAS POOL—ZAPATA COUNTY

Texas Co.'s No. 32 Measles, in Cerrito Blanco Sur. ... T.D. 1,197 ft.; comp. 100 bbls. dly.
Texas Co.'s No. 33 Whitehead, 2,365 ft. from SE line, 19,515 ft. from SW line of Cerrito Blanco grant.... Spudded in.
S. R. & C. Oil Corp.'s No. 2-C Trevino, 330 ft. from S line, 330 ft. from W line of N½ of Blk. 13, in Sur. No. 412 ..... Location.

JENNINGS POOL—ZAPATA COUNTY

United Prod. Corp.'s No. 11 Measles, 3,483 ft. from NW line, 16,500 ft. from SW line of Cerrito Blanco grant ..... T.D. 1,503 ft.; testing sand at 1,506-08 ft.

Wildcat Operations in Louisiana-Arkansas

(Continued from Page 48)

Hirschfield-Bailey Interests' No. 1 Mickle, 660 ft. N and E, SW cor. SE Sec. 7-13-13 ..... S.D. chalk 1,170 ft.
N. B. Porter's No. 1 J. W. Porter Est., 330 ft. N and E, SW cor. SE SE Sec. 23-12-13 ..... Coring sand 1,127 ft.

EAST CARROLL PARISH

Marr & Collins' No. 1 Desha Lbr. Co., NW Sec. 42-21-12.. Rig up.

SABINE PARISH

A. F. Allen's No. 1 G. W. Belton, NE cor. NW NW Sec. 33-9-13 ..... S.D. fuel 400 ft.

CONVERSE DISTRICT

A. G. Craig's No. 1 Belton, 330 ft. N and E, SW cor. NW NW Sec. 33-8-13 ..... Derrick.
Mamie S. Hammond's No. 1 Patrick, 330 ft. N, 2,310 ft. W, SE cor. Sec. 1-9-13 ..... T.A. 3,235 ft.
Helena O. & G. Co.'s No. 1 C. Jackson, 330 ft. S and W, NE cor. SW SW Sec. 10-9-13 ..... S.D. 1,000 ft.
Lambert et al's No. 1 Edwards, 300 ft. S and E, NW cor. SW NW Sec. 29-8-13 ..... Using acid 2,000 ft; T.D. 3,360 ft.
H. C. Lessinger's No. 1 Bowman-Hicks Lbr. Co., 328 ft. S and E, NW cor. SW Sec. 13-9-13 ..... S.D. 3,185 ft.
Joe Modisette's No. 3 Frost Lbr. Industries, 330 ft. S and E, NW cor. NE SW Sec. 16-9-13 ..... S.D.; W.O. 3,190 ft.
C. L. Nixon's No. 1 Patrick, 330 ft. S and E, NW cor. NE SW Sec. 21-9-13 ..... Tested dry; W.O.; T.D. 1,575 ft.
Robertson Drlg. Co.'s No. 1 Bowman-Hicks Lbr. Co., 330 ft. S and E, NW cor. NW NW Sec. 23-9-13... Cmtd. 6⅝-in. 1,564 ft.; T.D. 1,604 ft.
Sabine Royalties Co.'s No. 1 Balew & Carter, 330 ft. N and E, SW cor. NW SW Sec. 21-9-13 ..... Drlg. 2,008 ft.
E. M. Self's No. 1 G. I. Paul, 330 ft. N and W, SE cor. NE SW Sec. 9-9-13 ..... Drlg. 1,813 ft.
Homer Tyson's No. 1 G. W. Hough, 330 ft. S and E, NW cor. SW NW Sec. 31-9-13 ..... Rig up.
Windsor O. & G. Co.'s No. 1 Barr, 330 ft. E, 990 ft. N, SW cor. NW Sec. 15-9-13 ..... Rigging up.
Windsor Oil Co.'s No. 2 Barr, 330 ft. N and E, SW cor. NW Sec. 15-9-13 ..... Location.

Arkansas

ARKANSAS COUNTY

Allen & Wright's No. 1 C. P. Trice, SE cor. NW SW SE Sec. 9-2s-3w ..... Derrick.

COLUMBIA COUNTY

C. W. Alworth et al's No. 1 W. D. King, SW cor. SE SW Sec. 16-17-20 ..... S.D. 1,864 ft.

JEFFERSON COUNTY

J. E. Elliott's No. 1 B. V. Nevin, 440 ft. N and E, SW cor. SW NW Sec. 26-4-1e ..... Derrick.
R. V. Harrell et al's No. 1 McGoughey, NW cor. Sec. 22-7-1e ..... S.D. 1,550 ft.

HEMPSTEAD COUNTY

Kentucky O. & G. Co.'s No. 1 Leslie, NW cor. SW NW Sec. 21-9-26 ..... Derrick.

LAFAYETTE COUNTY

Geo. W. Harper's No. 1 Reed-Bodcaw, NW cor. Sec. 16-15-23 ..... Coring wtr. sand 2,414 ft.

LONOKE COUNTY

Joe D. Strahan's No. 1 Hardin, NW cor. NW NW Sec. 18-2s-7 ..... Rig up.

MILLER COUNTY

Duluth-Ark. Oil Co.'s No. 3 Beck, 330 ft. S and E, NW cor. SE SW Sec. 24-15-26 ..... S.D. 500 ft.
Claude English et al's (was Tarkington et al's) No. 1 Gibson, 1,980 ft. N, 660 ft. E, SW cor. Sec. 30-18-27 S.D. 300 ft.

OUACHITA COUNTY

J. D. Reynolds' No. 1 Snow Hill Baptist Church, 525 ft. E, 115 ft. S, NW cor. SE SW Sec. 28-15-16.... S.D. 1,460 ft.

POINSETT COUNTY

Ark. State O. & G. Co.'s No. 1 fee, C NE NE Sec. 13-11-3e ..... Derrick.

NEVADA COUNTY

Longoria et al's No. 1 Dick Gulley heirs, Sec. 2-12-20.... Began drlg. July 5 and S.D.

Mississippi

JONES COUNTY

Snow-Black Pet. Co.'s No. 1 Watson, 600 ft. W, 210 ft. S, center, Sec. 24-7-12 ..... Drlg. shale 2,930 ft.

LAMAR COUNTY

Lamar Oil Co.'s No. 1 Scott, NE NE Sec. 18-2n-14..... S.D. 3,010 ft.

MADISON COUNTY

H. A. Wilson, tr.'s No. 1 Copex, 200 ft. N and E, SW cor. SW NE Sec. 24-9-3e ..... Began Drlg. Aug. 13; drlg. 225 ft.

NEWTON COUNTY

Bob Dalton et al's No. 2 Majure, SE SE Sec. 25-6-11 Rig up.

WALTHALL COUNTY

Mutual O. & G. Co.'s No. 1 Boyd, Sec. 24-2n-9e, SW cor. SW SE ..... Derrick pattern.

WARREN COUNTY

Orbet Drlg. Co.'s No. 1 R. L. Parker, 300 ft. E, CWL, Sec. 14-14-1e ..... Rig up.

Louisiana-Arkansas Proven Areas

North Louisiana

CADDO—BETHANY

Company, well, farm name, section and block—	Remarks:
Tom Collins Pet. Co.'s No. 1 Gill & Lipscomb, 660 ft. N, 1,500 ft. E, SW cor. Sec. 17-16-16	Derrick.

CADDO PARISH—BLANCHARD

Calatex O. & G. Co.'s No. 1 G. M. Agurs, Sec. 9-16-16.... Cmtd. 4½-in. 2,305 ft.; T.D. 2,-997 ft.

CADDO—RODESSA

Ark. La. P. L. Co.'s No. 1 Williams & Windham, Sec. 4-13-16, 560 ft. S, 660 ft. E, NW cor. NE NW ..... Coring 5,590 ft.
United Gas Public Service Co.'s No. 1 Festervan, Sec. 28-23-15, 1,980 ft. N, 1,320 ft. E, SW cor. ..... Coring shale 5,430 ft.

DE SOTO PARISH

Tom McKinney et al's No. 1 J. M. Nabors, 330 ft. N and E, SW cor. SE SE Sec. 26-12-12 ..... Rig up.

MOREHOUSE PARISH

United Gas Public Service Co.'s No. 29 Crossett Lbr. Co., 661 ft. E, 660 ft. N, SW cor. SW SW Sec. 17-23-5 ..... Began drlg. Aug. 24; 13-in. 157 ft.; 9-in. 870 ft.
United Gas Public Service Co.'s No. 30 Crossett, Sec. 25-23-4e ..... Cmtd. 6⅝-in. 2,168 ft.; used acid 2,216 ft.; arranging test.
United Gas Public Service Co.'s No. 2 Patton, 3,375 ft. S, 2,917 ft. E, NW cor. Sec. 13-20-11 ..... Waiting on gauge; T.D. 2,212 ft.

OUACHITA PARISH

Century Carbon Co.'s No. 3 McGee, 220 ft. S, 4,667 ft. E, NW cor. Sec. 10-18-4 ..... Cmtd. 6-in.

RED RIVER PARISH

E. M. Thompson's No. 1 T. J. Crichton, SW SE Sec. 17-13-10 ..... Drlg. 1,700 ft.

SABINE PARISH—ZWOLLE

D. D. Alexander's No. 2 Cooper, 660 ft. S, 330 ft. W, NE cor. NW NE Sec. 31-3-11 ..... Began drlg. Aug. 27; 10-in. 40 ft; drlg. 700 ft.
Baird Bros.' No. 1 Trammell, 600 ft. N, 330 ft. W, SE cor. NE Sec. 30-3-11 ..... S.D.; W.O. 2,580 ft.
J. C. Chandler's No. 1 Raina, SW cor. NW Sec. 14-7-11.. Began drlg. Aug. 21; 10-in. 42 ft.
Cummings Oil Co.'s No. 1 T. M. Phillips, 330 ft. N, 462 ft. W, SE cor. NE ..... Bailing 2,429 ft.
Dyer et al's No. 1 McCollister, 330 ft. S and E, NW cor. SW NE Sec. 24-7-12 ..... Derrick.
Feazell & Davenport's No. 1 Aaron, 330 ft. S and E, NW cor. Sec. 32-9-13 ..... S.D. 1,973 ft.
P. A. Flannery's No. 1 Stille, 620 ft. W, 205 ft. N, SE cor. NE SW Sec. 35-8-13 ..... S.D. 1,910 ft.
Investors Prod. Co.'s No. 1 S. J. Williams, 600 ft. E and S, NW cor. Sec. 24-7-11 ..... W.O.S.R. 2,805 ft.
T. E. Kelly's No. 1 McClanahan, 1,000 ft. S, 330 ft. E, NW cor. SW NW Sec. 26-8-11 ..... S.D.; repairs 1,230 ft.
Lowery & Green's No. 1 Adair, 330 ft. N and W, SE cor. SE SW Sec. 19-8-11 ..... Drlg. 1,400 ft.
Magnolia Pet. Co.'s No. 2 J. M. Cook, 330 ft. S, 320 ft. W, NE cor. NE SW Sec. 30-8-11 ..... Derrick.
Pelican Nat. Gas Co.'s No. 21 La. Long Leaf Lbr. Co., 660 ft. N, 565 ft. W, SE cor. SE SW Sec. 3-7-11..... Dry; W.O. 2,700 ft.
Pelican Nat. Gas Co.'s No. 22 La. Long Leaf Lbr. Co., 330 ft. S and E, NW cor. SW NE Sec. 3-7-11..... Rig up.
Pelican Nat. Gas Co.'s No. 24 La. Long Leaf Lbr. Co., 330 ft. N and E, SW cor. Sec. 5-7-11..... Cmtd. 7-in. 2,360 ft.; bailing 2,-446 ft.
H. C. Pitts' No. 1 Trammell 330 ft. N and E, SW cor. NW NE Sec. 5-7-11 ..... Derrick.
Pugh-Hickman Drlg. Co.'s No. 1 Stille (No. 1 drilled as No. 3), 330 ft. S and W, NE cor. SE SE Sec. 16-7-11 ..... Began drlg. Aug. 24; 10-in. 40 ft; top marl 2,440 ft; cmtd. 6-in. 2,235 ft. T.D. 2,435 ft.
People's O. & G. Co.'s No. 1 Raines, 330 ft. N, 100 ft. W, SE cor. NE Sec. 15-7-11 ..... Derrick.
H. Reeves et al's No. 1 Ponder, 330 ft. N and W, SE NW Sec. 15-7-11 ..... Cmtd. 6-in 2,317 ft.
Rig Oil Co.'s No. 1 Walden, 330 ft. N and E, SW cor. NW NE Sec. 28-8-11 ..... Derrick.
L. J. Tillery's No. 1 Sabine Lbr. Co., 300 ft. S, 320 ft. W, NE cor. Lot 3, La. Nava grant, Sec. 5-7-11..... Location.
C. H. Tuttle's No. 4 Byrd, 600 ft. S, 920 ft. E, NW cor. NW NW Sec. 7-7-10 ..... Derrick.

Arkansas

UNION COUNTY—URBANA

Wilson & Chapman's No. 1-B Hadley, Sec. 3-18-13..... O.W.D.D.; drlg. plug; T.D. 3,-650 ft.

Mississippi

HINDS COUNTY

Atkins & Hightower's No. 1 Woodland Hills, 400 ft. W, 427 ft. N, SE cor. NW NE Sec. 26-6-1e ..... Cmt. 8-in. 770 ft; drlg. 2,150 ft.

RANKIN COUNTY

Jas. A. Alexander, tr.'s No. 2 Love Pet. Co., 720 ft. S, 63 ft. E, C Sec. 36-6-1e ..... Rig up.
J. A. Alexander, tr.'s No. 1 Love Pet. Co., 600 ft. W, 240 ft. S, NE cor. NW NE Sec. 1-5-1e ..... Drlg. sand 2,195 ft.
Jas. A. Baker et al's No. 1 Hawkins, 440 ft. E, 523 ft. N, SW cor. SE SW Sec. 31-6-2e ..... Derrick.
Ferguson, Fuller & Metz' No. 1 Ammons, 350 ft. E and S, NW cor. NW NW Sec. 35-3n-3e ..... Derrick.
Muse & Muse's No. 1 Carlton, Sec. 13-5n-1e, 450 ft. E, 725 ft. N, SW cor. ..... Cmtd. 6-in. 2,407 ft.

EAST TEXAS (Border Counties)

MARION COUNTY

Terry et al's No. 1 E. B. Colgin, 300 ft. N and E, SW cor. Martin Noll Sur. ..... Derrick.

PANOLA COUNTY

W. H. Nichols et al's No. 1 S. W. Ray, 330 ft. S of N line, 330 ft. W of E line, W. P. Culver Sur. ..... Derrick.
M. H. Robbins et al's No. 1 Alsee Williams, 165 ft. N and E, SW cor. 30-ac. tract in Winnie Mann Sur. .. Derrick.

Gulf Coast Fields and Wildcats

(Continued from Page 51)

Mills Bennett Prod. Co.'s No. 1-C Barber, Henry Griffith League, 100 ft. E, 30 ft. N of SW cor. of tract.. Drlg. sand 4,679 ft.
Mills Bennett Prod. Co.'s No. 5 Kirby (W.O.), Henry Griffith League, 400 ft. from W line, 41 ft. from S line of tract ..... Comp. 500 bbls. at 5,049 ft.; ½-in. choke; T.D. 5,204 ft.
Mills Bennett Prod. Co.'s No. 2-B Gulf fee, Wm. Bloodgood Sur., 1,240 ft. N along N line, 800 ft. E at right angles to W line ..... Drlg. sand 485 ft.
Sinclair Prairie Oil Co.'s No. 8 Wilburn (W.O.), Henry Griffith League ..... T.D. 5,271 ft.; sidetracked at 5,-075 ft. and drlg. new hole 4,-083 ft.
Sinclair Prairie Oil Co.'s No. 15 Wilburn, Henry Griffith League, 150 ft. W of No. 14 ..... Derrick.
Sun Oil Co.'s No. 11 J. Wilburn (W.O.), Wm. Hodges Sur. ..... Drlg. shale and sand showing oil 5,105 ft.
Sun Oil Co.'s No. 12 Wilburn (W.O.), Wm. Hodges Sur.. T.D. 5,127 ft.; P.B. to 4,653 ft.; sidetracking 4,958 ft.; drlg. new hole showing oil 5,122 ft.
Sun Oil Co.'s No. 17 Wilburn, Henry Griffith League, 150 ft. W of No. 6 and 50 ft. S of N line ..... Derrick.
Texas Co.'s No. 7 Wilburn (W.O.), Henry Griffith League. Drlg. shale 4,707 ft.
Texas Gulf Prod. Co.'s No. 3 C. Kirby (W.O.) ..... Sidetracked at 4,373 ft.; drlg. 5,-229 ft.
Texas Gulf Prod. Co.'s No. 11-B Kirby, Henry Griffith League, 411 ft. from S line, 473 ft. from W line of tract ..... Drlg. sandy shale 4,407 ft.
Yount Lee Oil Co.'s No. 21 Chambers County (W.O.), Wm. Bloodgood Sur. ..... Drlg. salt 2,851 ft.
Yount Lee Oil Co.'s No. 22 Chambers County, Wm. Bloodgood Sur., 200 ft. from W line, 262½ ft. from N line of lease ..... Drlg. hard sand and lime rock 3,706 ft.

RABBS RIDGE—FORT BEND COUNTY

Gulf Prod. Co.'s No. 5-A Gubbels, Samuel Kennedy Sur., 492 ft. from W line, 1,460 ft. from S line .... Comp. 45 bbls. per hour; ⅝-in. choke, 5,364 ft.
Humble O. & R. Co. and Gulf Prod. Co.'s No. 13-A F. I. Booth, J. Rabb Sur. ..... Drlg. shale 5,018 ft.
Humble O. & R. Co. and Gulf Prod. Co.'s No. 14-A Lockwood, J. Rabb Sur., 150 ft. due E of No. 14.. Drlg. shale 5,179 ft.
Humble O. & R. Co. and Gulf Prod. Co.'s No. 21-A Lockwood & Sharp, J. Rabb Sur., 695 ft. N of No. 20 ..... Abd. 4,550 ft.; blew out.
Humble O. & R. Co.'s No. 23 Lockwood & Sharp, J. Rabb Sur., 1,923 ft. E line, 370 ft. N line of tract.. Drlg. shale 3,311 ft.
Texas Co.'s No. 1 Sherman McCall, Samuel Kennedy Sur., 300 ft. N, 152 ft. W of SE cor. lease ..... Drlg. shale 3,690 ft.

HIGH ISLAND—GALVESTON COUNTY

Yount Lee Oil Co.'s No. 1-B Broussard & Orme, 136 ft. E of center of W line of M. Dunman Sur. ..... Drlg. sticky shale 5,560 ft.
Yount Lee Oil Co.'s No. 36 Cade, N. Fitzsimmons Sur., 600 ft. from S line, 240 ft. E of No. 34 ..... Comp. 685 bbls. P.L. oil; ¼-in. choke, 5,382 ft.
Yount Lee Oil Co.'s No. 37 Cade, N. Fitzsimmons Sur., 600 ft. S of No. 36 ..... Rig.
Yount Lee Oil Co.'s No. 1-B Cade, N. Fitzsimmons Sur., 488 ft. from S line, 320 ft. from E line ..... Drlg. shale and sand 5,027 ft.
Yount Lee Oil Co.'s No. 17 Smith, M. Dunman Sur., 300 ft. SW of No. 14 ..... Sand and shale 6,353 ft.
Yount Lee Oil Co.'s No. 18 Smith, M. Dunman Sur., 175 ft. S of No. 9 ..... Dry and abd. 5,833 ft.

ARIOLA—HARDIN COUNTY

Republic-Houston Oil Co.'s No. 4 Ariola, 300 ft. NE of No. 1, Ariola Sur. ..... Drlg. sand 4,016 ft.

BATSON—HARDIN COUNTY

Danciger O. & R. Co.'s No. 1 Hooks, 95 ft. S. 150 ft. W of NE cor. of Strip 18, Donoghue Sur. ..... S.D.; W.O. 5,011 ft.

TOMBALL—HARRIS COUNTY

Humble O. & R. Co. and Magnolia Pet. Co.'s No. 1 Bloecher, J. N. Hooper Sur. (Abst. A-375), 1,050 ft. from S line, 650 ft. from W line ..... W.O.C. 5,578 ft.
Humble O. & R. Co. and Magnolia Pet. Co.'s No. 1 Gebhart, Wm. Perkins Sur., 1,399 ft. from N line of survey, and 1,400 ft. from W line of tract .... Drlg. shale 5,525 ft.
Humble O. & R. Co.'s No. 1 Hendricks, 505 ft. from E line, 466 ft. from N line of 95.7-ac. tract, Wm. Hurd Sur., (Abst. 376) ..... Drlg. shale 2,821 ft.
Texas Co.'s No. 1 H. Martens, C. Goodrich Sur., 666 ft. W, 300 ft. N of SE cor. of lease ..... Drlg. sand and boulders 291 ft.
Texas Co.'s No. 2 E. Mueller, J. M. Hooper Sur., 655 ft. N and 389 ft. W, SE cor. of lease ..... W.O.C. 1,183 ft.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 102 Jordit, Jordit Sur. ..... Rig.

ESPERSON—LIBERTY COUNTY

Cranfill-Reynolds Co.'s No. 7 Davis (W.O.), Duncan Sur. Rig up to W.O. 6,866 ft.
Cranfill-Reynolds Co.'s No. 4 Esperson (W.O.) ..... Temp. S.D. 5,286 ft.
Cranfill-Reynolds Co.'s No. 11 Moores Bluff, Duncan Sur., 2,100 ft. from N line, 1,069 ft. from E line of 632-ac. tract ..... Drlg. wtr. sand 4,145 ft.

HULL—LIBERTY COUNTY

Miramar Oil Corp.'s No. 2 Phoenix Dev. Co. (25 ac.), Jesse DeVore Sur., 330 ft. S line, 250 ft. W line ... Set csg. 4,125 ft.
The Texas Co.'s No. 8 Hannah (W.O.), Jesse DeVore Sur. ..... T.D. 5,132 ft.; sidetracking; drlg. new hole 5,288 ft.

CONROE—MONTGOMERY COUNTY

Alpha Oil Co.'s No. 1 Allen, Lemuel Smith Sur., 275 ft. E line, 467 ft. N line .. .. Sand 5,133 ft.; cmtd. csg.
Alpha Oil Co.'s No. 10 Keystone Mills, L. Smith Sur., 755 ft. NE of No. 5 ..... Derrick.
H. M. Crighton's No. 2-B South Tex. Dev. Co., T.&N. O. Sur. No. 5, center 13.50 acres ..... W.O.C. 5,118 ft.
Feltex Oil Co.'s No. 4 Kirby-Bertrand, G. W. Wagers Sur., 340 ft. W line, 1,389 ft. S line ..... Drlg. 5,130 ft.; showing oil.
Gulf Coast Drlg. & Prod. Co.'s No. 12-A Keystone Mills, A. James Sur., 467 ft. from W line, 933 ft. S of No. 11 ..... Derrick.
Harrison & Abercrombie's No. 7 Massey, J. Massey Sur., 852 ft. S of No. 8 ..... Drlg. shale 1,249 ft.
Houston Oil Co.-Tide Water Oil Co.'s No. 8 Hamman, C. B. Stewart Sur., 1,214 ft. from W line, 1,690 ft. from S line ..... Drlg. shale 974 ft.
Houston Oil Co.-Tide Water Oil Co.'s No. 5 Moore, Lemuel Smith Sur., 466 ft. SW cor. ..... Drlg. shale 4,551 ft.
Humble O. & R. Co.'s No. 8 Emory, W.C. Ry. Sur., Drlg. shale 4,551 ft.
Humble O. & R. Co.'s No. 9 Dobbins, Ransom House Sur., 425 ft. N line of tract, 3,610 ft. W line ..... Drlg. sand and shale 5,005 ft.
Humble O. & R. Co.'s No. 22 Madeley, Ransom House Sur., 933 ft. NE of No. 10 ..... Drlg. shale 3,749 ft.
Humble O. & R. Co.'s No. 23 Madeley, Ransom House Sur., 933 ft. SW of No. 3 ..... Drlg. shale 2,333 ft.
Humble O. & R. Co.'s No. 2 L. B. McComb, Lemuel Smith Sur., 625 ft. N line, 500 ft. E line ..... Drlg. shale 2,131 ft.
Humble O. & R. Co.'s No. 7 L. B. McComb, L. Smith Sur., 525 ft. SW, 550 ft. NW of E cor. of lease .... Drlg. shale 2,782 ft.
Humble O. & R. Co.'s No. 18 Moore, L. Smith Sur., 933 ft. NW of No. 8 ..... Shale 5,125 ft.; cmtd. csg.
Humble O. & R. Co.'s No. 28 Moore, Lemuel Smith Sur., 933 ft. SW of No. 23 ..... Shale 5,126 ft.; cmtd. csg.
Humble O. & R. Co.'s No. 32 Moore, L. Smith Sur. .... Drlg. shale 4,721 ft.
Humble O. & R. Co.'s No. 38 Moore, L. Smith Sur. ... Drlg. shale 947 ft.
Humble O. & R. Co.'s No. 42 Moore, L. Smith Sur., 550 ft. SE right angles out of most easterly NE cor. of lease ..... Drlg. shale 3,302 ft.
Humble O. & R. Co.'s No. 41 South Tex. Dev. Co., Theodore Slade Sur., 933 ft. SW of No. 4 ..... Drlg. shale 1,688 ft.
Humble O. & R. Co.'s No. 47 South Tex. Dev. Co., Theo. Slade Sur., 933 ft. NE of No. 9, and 933 ft. NW of No. 2 ..... Drlg. shale 968 ft.
Humble O. & R. Co.'s No. 2-E South Tex. Dev. Co., C. A. West Sur. ..... Drlg. shale 4,110 ft.
Humble O. & R. Co.'s No. 1-D South Tex. Dev. Co., 344 ft. E of center of W line of T.&N.O. Sur. No. 15 Drlg. sand 5,153 ft.
Humble O. & R. Co.'s No. 1-E South Tex. Dev. Co., C. A. West Sur., center of 20-ac. lease ..... Drlg. sand 5,145 ft.
Malta Oil Co.'s No. 2 Tex-Osage, G. Harris Sur., 375 ft. S line, 466 ft. N line of lease ..... Drlg. shale 3,815 ft.
Martex Oil Corp.'s No. 1 J. C. Young, Wilson Strickland Sur., 231 ft. from E line, 131 ft. from S line of 2½ acres ..... Drlg. shale 3,570 ft.
R. D. Simonton, rec., J. W. Watson Sur., center S 20 acres of Coffield 40 acres ..... Drlg. 1,396 ft.
Southern Liberty Oil Co.'s No. 4-B South Tex. Dev. Co. ..... Drlg. 5,136 ft.; showing oil
Southland Oil Co.'s No. 5 Cummings, Wilson Strickland Sur., 766 ft. E line, 284 ft. S line of lease .... Drlg. shale 4,985 ft.
Strake Pet. Corp.'s No. 2 Etheridge, S. H. Bryan Sur., 467 ft. E line, 2,350 ft. S line lease ..... Derrick.
Strake Pet. Corp.'s No. 2 Keystone Mills ..... Drlg. shale 4,600 ft.
Sun Oil Co.'s No. 8 Foster, J. Bricker Sur. ..... Drlg. shale 4,995 ft.
Sun Oil Co.'s No. 11 Foster, J. Bricker Sur. ..... Drlg. shale 5,806 ft.
Sun Oil Co.'s No. 13 Foster, J. Bricker Sur. ..... Drlg. shale 4,900 ft.
Sun Oil Co.'s No. 15 Foster, J. Bricker Sur. ..... Coring 5,125 ft.
Sun Oil Co.'s No. 16 Foster, 467 ft. S and E lines, J. Bricker Sur. ..... Rigging.
Sun Oil Co.'s No. 32 Foster, J. Bricker Sur., 1,358 ft. S, 1,613 ft. E of lease and survey line ..... Derrick.
Tide Water Oil Co.'s No. 13 Dean, W. C. C. Lynch Sur., 330 ft. out of NW cor. ..... T.D. 6,020 ft.; pulling pipe 2,994 ft.; sidetracking 2,806 ft.; whipstock cmtd.
Tide Water Oil Co.'s No. 3 Eichlitz, L. Smith Sur., 467 ft. N line, 310 ft. E line ..... Drlg. 460 ft.
Tide Water Oil Co.'s No. 9 Krohn, H. Bryan Sur., 467 ft. W line, 1,266 ft. N line and 797 ft. S line ..... Rigging.
Tide Water Oil Co.'s No. 24-A Lewis, C. B. Stewart Sur., 1,400 ft. from W line, 1,345 ft. from N line .... Comp. 84 bbls. per hour; ⅛-in. choke, 5,149 ft.
Tide Water Oil Co.'s No. 25-A Lewis, C. B. Stewart Sur., 1,400 ft. W line, 2,233 ft. N line ..... Drlg. shale 4,438 ft.
Tide Water Oil Co.'s No. 26-A Lewis, C. B. Stewart Sur., 1,175 ft. W line, 3,101 ft. N line ..... Gumbo and lime 2,698 ft.
West Prod. Co.'s No. 1 Foster Lbr. Co., 467 ft. N line, 650 ft. W line, Sec. 3, T.&N.O. Sur. ..... Drlg. shale 1,320 ft.

LIVINGSTON—POLK COUNTY

Gist Oil Co.'s No. 1 Kavanaugh Collins, A. Viesca Sur., 150 ft. NE, 150 ft. NW, SE cor. G. P. Reid's 740-ac. tract ..... Drlg. shale 3,620 ft.

OUTLET

FURNACE TEMPERATURES

HELD WITHIN

¾° — 1° ±

New Taylor Dubl-Response Temperature Regulator maintains control during 24-hour run despite load changes

HERE'S another instance of unusual temperature control by the new Taylor Regulator. More proof to strengthen the belief that this instrument is one of the most important developments ever offered for temperature regulation in the oil and gas industry.

In the above installation the Taylor Dubl-Response maintained uniform outlet furnace temperatures by throttling the valve in the gas supply to the burners. During the 24-hour run the plant was switched from stabilizer gas to gas from another point, and back again. Temperatures were held within ¾° —1° plus or minus, despite great difference in B.T.U. content.

Wherever this new development has been installed—in stabilizers, towers, stills—it has successfully maintained uniform control despite load changes, process time lag, and varying operating conditions.

It overcomes stuffing box friction—eliminates "sticky valves."

It maintains straight line control automatically, eliminating manual adjustments during load changes.

It eliminates hunting. Assures throttling valve action.

Write for special Taylor Bulletin on this new Regulator and see how easily and quickly it can be applied in your plant. Send today to Taylor Instrument Companies, Rochester, N. Y., or to our Branch office in Tulsa, Oklahoma.

*Tycos Taylor TEMPERATURE and PRESSURE INSTRUMENTS

*The name Taylor now identifies our complete line of products including Tycos instruments.

INDICATING · RECORDING · CONTROLLING

Shell Pet. Corp.'s No. 2 Davis & Holmes, A. Viesca Sur., 485 ft. N, 376 ft. W of NE cor. of Jim Duff 35-ac. tract ..... T.D. 4,438 ft.; pulling screen.
Sunby Oil Co.'s No. 1 Grandburry & Smith, W. Shadburn Sur., 500 ft. SW of NE cor. Williams Sur., 150 ft. NW ..... W.O.C. 436 ft.

FANNETT—JEFFERSON COUNTY

Black Gold Oil Co.'s No. 1 Jackson, Wm. Smith Sur., 3,766 ft. S line, 117 ft. from W line (356) ..... Rigging up.
Gulf Prod. Co.'s No. 7 Burrell, W. H. Smith Sur., 150 ft. W of No. 6 ..... Drlg. sand and shale 2,761 ft.
Gulf Prod. Co.'s No. 13 Thomas, W. H. Smith Sur. .... T.D. 4,190 ft.; pulling screen to deepen.

HANKAMER—LIBERTY COUNTY

Gulf Prod. Co.'s No. 2 Crowe & Jacobs, 1,760 ft. E, 1,650 ft. N of SW cor. of H.&T.C. Sur. No. 21 ..... Drlg. sticky shale 4,933 ft.

HOCKLEY—HARRIS COUNTY

John Deering's No. 4 Warren, T. A. Scully Sur., 250 ft. SW of Texas Co.'s No. 2 Warren ..... Drlg. 1,410 ft.

HUMBLE—HARRIS COUNTY

Texas Co.'s No. 22 Koehler ..... Comp. 200 bbls. net oil 3,119 ft.

MYKAWA—HARRIS COUNTY

Crown-Framer Oil Co.'s No. 4 Minnetex, Wm. Lovett Sur., 165 ft. S, 120 ft. W of NE cor. Blk. 193 ..... T.D. 6,530 ft.; P.B. to 5,250 ft.; sidetracked and D.D.

PIERCE JUNCTION—HARRIS COUNTY

Rio Bravo Oil Co.'s No. 19-A Settegast (D.D.), J. Kopman Sur. No. 44, 2,535 ft. S, 285 ft. W of NE cor. of "A" lease ..... Rig up to deepen 4,181 ft.
Rio Bravo Oil Co.'s No. 22-A Settegast (D.D.), J. Kopman Sur. No. 44, 900 ft. S, 300 ft. W of NE cor. lease ..... T.D. 4,311 ft.; sidetracked and set 4½-in. screen at 4,208 ft.; pumping and flowing 400 bbls. net oil daily.

PORT NECHES—ORANGE COUNTY

Texas Co.'s No. 1-B Polk, Jacob Beaumont Sur., 150 ft. NE cor. ..... Derrick.
The Texas Co.'s No. 1 Orange Nat. Bank, 150 ft. out of NW cor of lease, Jacob Beaumont Sur. ..... T.D. 4,799 ft.; pulling screen and liner; swabbing.

GRETA—REFUGIO COUNTY

Atlantic Oil Prod. Co.'s No. 1 O'Brien, E. H. Winfield Sur., Blk. 5, 466 ft. from S line in center of block E and W ..... W.O.C. 4,371 ft.
Atlantic-Alamo's No. 1 J. J. O'Brien, E. H. Winfield Sur., 466 ft. out of NW cor. 167-ac. lease ..... W.O.C. 1,312 ft.
Atlantic-Alamo's No. 1 J. M. O'Brien, E. H. Winfield Sur., 466 ft. out of SE cor. 212-ac. tract ..... Drlg. plug 1,290 ft.
Atlantic Oil Prod. Co. and Heyser & Heard's No. 2 O'Brien ..... Derrick.
Blanco Oil Co.'s No. 2-B J. M. O'Brien, E. H. Winfield Sur., 466 ft. out of SE cor. 50 acres ..... Drlg. lime 3,133 ft.
Blanco Oil Co.'s No. 2-A J. J. O'Brien, N. C. Crunk Sur., 600 ft. SW of No. 1-A ..... Setting liner 4,379-99 ft.; preparing to test.
Circle W Oil Co.'s No. 1 O'Brien, E. H. Winfield Sur., 463 ft. from S line of survey, 466 ft. from E line of 112-ac. tract ..... W.O.C. 4,343 ft.
Circle W Oil Co.'s No. 2 O'Brien, E. H. Winfield Sur., 1,989 ft. from N line, 466 ft. from E line of 212-ac. tract ..... W.O.C. 4,348 ft.
Dash Prod. Co.'s No. 2 O'Brien, N. S. Crunk Sur., 466 ft. S of N line of center E and W ..... Drlg. shale 3,150 ft.
Dash Prod. Co.'s No. 3 O'Brien, N. S. Crunk Sur., 645 ft. of W line, 201 ft. at right angles R.R. ..... Drlg. 1,048 ft.
Greta Oil Corp.'s No. 3 O'Brien, E. H. Winfield Sur., 150 ft. out of SW cor. of tract ..... Drlg. shale 3,705 ft.
Greta Oil Co.'s No. 2 B. O'Brien, 933 ft. E of No. 1 B... Derrick.
Heyser & Heard's No. 2 O'Brien, E. H. Winfield Sur., 466 ft. NW cor. 50-ac. tract, Blk. 6 ..... Drlg. shale 1,540 ft.
Heyser & Heard's No. 1 J. M. O'Brien, C 8½, Blk. 5.. W.O.C. 1,320 ft.
Edwin M. Jones' No. 1 J. M. O'Brien, C 8½ of Blk. 4, or 466 ft. from S and W lines of 50-ac. tract.. Set surface csg.
Edwin M. Jones' No. 1 A. O'Brien ..... Rigging.
Edwin M. Jones' No. 3 O'Brien, E. H. Winfield Sur., Blk. 4, 466 ft. from N line in center E and W ..... Derrick.
Edwin M. Jones' No. 2-B O'Brien ..... Drlg. 1,710 ft.
Edwin M. Jones' No. 3-G O'Brien ..... Derrick.
Floboots Oil Corp.'s No. 2 O'Brien ..... Rigging.
Nesral Oil Co.'s No. 1-A Wilson Heard, M. J. Ximines Sur., 330 ft. out of NE cor. lease ..... Drlg. rock 4,975 ft.
Nesral Oil Co.'s No. 1 Ira Heard, M. J. Ximines Sur., 330 ft. out of NW cor. of 25-ac. tract ..... S.D. 1,900 ft.
Nesral Oil Co.'s No. 1 O'Connor ..... T.D. 4,353 ft.; preparing to comp.
Nesral Oil Co.'s (Pearson) No. 1 Thomas O'Connor, 330 ft. SE of railroad ..... Derrick.
Rutherford and Atlantic Oil Prod. Co.'s No. 1 O'Brien, Crunk Sur. ..... Drlg. shale 1,368 ft.
Smith & Flobott's No. 1 O'Brien, E. H. Winfield Sur., 150 ft. out of SW cor. ..... Sand 4,357-65 ft.; 433 bbls. through two ¾-in. chokes.
Smith & Flobott's No. 1 J. F. B. Heard, 466 ft. from W line, 522 ft. from S line of 150-ac. tract, Maria Jesus and Ximines Sur. (A-324) ..... Drlg. shale 3,705 ft.
Southwest Pet. Corp.'s No. 2-A O'Brien, E. H. Winfield Sur., 466 ft. NW cor. 25-ac. tract ..... Derrick.
Southwest Pet. Corp.'s No. 2-B O'Brien, E. H. Winfield Sur., 466 ft. from R.R. right of way, 933 ft. SW of No. 1-B ..... Drlg. hard rock 4,328 ft.
Southwest Oil Corp.'s No. 1 C. O'Brien, N. S. Crunk Sur., 430 ft. W of E line, 345 ft. S of N line of 22.7 acres ..... Drlg. shale 1,300 ft.
Texas Gulf Prod. Co.'s No. 1 J. M. O'Brien, J. A. Peoples Sur., 466 ft. SW cor., Blk. 3 ..... Derrick.
Texas Gulf Prod. Co.'s No. 2 J. M. O'Brien, J. A. Peoples Sur., 466 ft. NW cor., Blk. 3 ..... Moving in material.
Texas Gulf Prod. Co.'s No. 1 J. M. O'Brien, J. H. Winfield Sur., 466 ft. NE line, center E and W, Blk. 13 ..... Moving in material.
United Prod. Co.'s No. 6 Fox est., Wm. Hews and L. Brown Sur., 2,956 ft. N line, 787 ft. E line ..... W.O.C. 1,226 ft.

SOUTH LOUISIANA FIELDS

ASSUMPTION PARISH

Barnsdall Oil Co.'s No. 1 Williams, 330 ft. out of NE cor. Sec. 33-14s-14e ..... Drlg. shale 7,300 ft.

VINTON—CALCASIEU PARISH

Wilson Broad's No. 10 Wilson Strip, 650 ft. N, 379 ft. E, SW cor. SE NE Sec. 33-10s-12w ..... Drlg. in sand 2,593 ft.

CAMERON MEADOWS—CAMERON PARISH

Burton-Sutton Oil Co.'s No. 1 School Land, 500 ft. W, 20 ft. N, SE cor. Sec. 16-14s-13w ..... Drlg. lime and shale 5,801 ft.

CALCASIEU PARISH

Fred Oil Co.'s No. 1 Farast, 566 ft. N, 300 ft. W, SE cor. NW SE Sec. 26-8s-10w ..... Derrick.
Quintana Oil Co.'s No. 1 Nelson, 1,515 ft. N, 85 ft. W of SW cor. Sec. 23-10s-9w ..... Abd. 8,269 ft.
Union Sulphur Co.'s No. 1 Stout, 1,227 ft. N, 1,167 ft. W of SE cor. Sec. 26-8s-8w ..... Drlg. 7,253 ft.

CHOCTAW—IBERVILLE PARISH

Standard Oil Co. of La.'s No. 2 Myrtle Grove, 2,100 ft. N, 200 ft. W, SE cor. SW Sec. 52-9s-11e ..... Coring 2,434 ft.
Standard Oil Co. of La.'s No. 5 Myrtle Grove, 1,700 ft. N, 200 ft. W, SE SW cor. SW Sec. 52-9s-11e ..... Capping piling.

FLOATING TOP

OIL men almost unanimously agree that the floating top type of gasoline storage tank is most effective in protecting gasoline against evaporation. It is this type of tank which we show in the above photograph. Gulf Gasoline is being protected here. And Gulf Gasoline is protected and checked through every operation—from the time the crude oil is taken out of the ground, transported, refined, stored until it is sold to the general public. Perhaps this will help you to understand better why Gulf Gasoline (like all Gulf Products) is always uniform—uniformly high in quality.

GULF REFINING COMPANY

EVANGELINE PARISH

J. E. Loadau's No. 2 Vidrine, 260 ft. W, 400 ft. S, NE cor. Sec. 47-3s-2e ..... O.W.D.D.; drlg. 1,532 ft.

GUEYDAN—VERMILLION PARISH

Pure Oil Co.'s No. 5 Alliance Trust Co., 525 ft. from N line, 580 ft. from W line of Sec. 34-11s-1w ..... Tested 4,370 ft.; show oil and gas; drlg. 4,387 ft.

Pure Oil Co.'s No. 1 Grady Lee-Humble, 2,031 ft. E. 225 ft. N of NW cor. Sec. 34, in Sec. 27-11s-1w.... Rigging.

Pure Oil Co.'s No. 4 Mulvey, 1,721 ft. from N line, 2,515 ft. from W line of Sec. 34-11s-1w ..... Drlg. lime 3,558 ft.

LAFOURCHE PARISH

Barnsdall Oil Co.'s No. 1 Harang, Lot 6, in Twp. 17s-20e. Drlg. sandy shale 1,432 ft.

LAKE BARRE—TERREBONNE PARISH

Texas Co.'s No. 9 Lake Barre-L.L.&E., 4,013 ft. S, 305 ft. E of NW cor. Sec. 30-21s-20e in Sec. 36-21s-19e ..... Drlg. shale 1,765 ft.

Texas Co.'s No. 22 State-Lake Barre, 150 ft. northerly from No. 18 ..... Drlg. salt 3,177 ft.

LOCKPORT—CALCASIEU PARISH

Magnolia Pet. Co.'s No. 4-A Watkins fee, 685 ft. E, 200 ft. N of SW cor. NW NE Sec. 9-10s-9w ..... Gumbo 1,228 ft.; cmtd. 13⅜-in. csg.

HACKBERRY—CAMERON PARISH

Gulf Ref. Co.'s No. 12 Irwin, 565 ft. N, 518 ft. E of SW cor. Sec. 44-12s-9w ..... Drlg. hard shale 6,104 ft.

Texas Co.'s No. 10-B State, 1,000 ft. E, 200 ft. N of NE cor. Sec. 13-12s-10w ..... Cutting and pulling screen 7,264 ft.

Union Sulphur Co.'s No. 7 Gulf Land-Humble lease, 1,010 ft. N, 661 ft. E of SW cor. Sec. 12-12s-10w.... Drlg. wtr. sand 5,565 ft.

IOWA—CALCASIEU AND JEFF DAVIS PARISHES

Barnsdall Oil Co.'s No. 1 Heyd, 330 ft. SW cor. of E½ SW Sec. 7-9s-6w ..... Derrick.

Magnolia Pet. Co.'s No. 4 Waite, Sec. 13-9s-7w, 330 ft. from E line, 660 ft. S of No. 3 ..... Sticky shale 6,270 ft.; drill pipe stuck; fishing.

Magnolia Pet. Co.'s No. 2 Willett, 990 ft. N, 330 ft. E of SW cor. NW Sec. 7-9s-6w ..... Drlg. sandy lime 6,729 ft.

Shell Pet. Corp.'s No. 4 Heyd, 2,122 ft. W, 1,310 ft. S of NE cor. Sec. 13-9s-7w ..... T.D. 4,929 ft.; blow out bridged and fire out.

Shell Pet. Corp.'s No. 5 Heyd, 325 ft. S of NW cor. of Sec. 18-9s-7w, and 225 ft. W of E line of Sec. 13.. Drlg. shale 3,029 ft.

Shell Pet. Corp.'s No. 6 Heyd, 660 ft. S line, 660 ft. W line of lease, Sec. 18-9s-7w ..... Rig.

Shell Pet. Corp.'s No. 2 Stafford, 330 ft. from W line and 265 ft. from S line of NW Sec. 18-9s-6w ..... Drlg. sticky shale 6,038 ft.

Shell Pet. Corp.'s No. 1 Tuten, 265 ft. S, 330 ft. W of NE cor. SW Sec. 13-9s-7w ..... Temp. S.D. 1,337 ft.

JEFFERSON DAVIS PARISH

Humble O. & R. Co.'s No. 3 Devilbiss, 1,850 ft. S, 250 ft. W of NE cor. Sec. 14-9s-4w ..... T.D. 7,843 ft.; P.B. to 7,100 ft.; drlg. new hole 7,285 ft.

JENNINGS—ACADIA PARISH

Yount Lee Oil Co.'s No. 13 Houssiere-Latrielle, Sec. 47-9s-2w, 300 ft. E of No. 12 ..... Cmtd. 10-in. csg. 5,092 ft.

EAST BATON ROUGE PARISH

British-American Oil Co.'s No. 1 Louisiana, 2,750 ft. NE NW cor. Sec. 79, and 1,700 ft. N of NE Sec. 79, in Sec. 6-8s-1e ..... Rigging up.

LEESVILLE—LA FOURCHE PARISH

Texas Co.'s No. 7 L.L.E., 2,921 ft. S, 300 ft. W of NE cor. Sec. 27-21s-22e ..... Spudding.

PLAQUEMINES PARISH

Texas Co.'s No. 9 Garden Island Bay, 4,791 ft. S, 2,504 ft. W of NE cor. Sec. 104-23s-32e ..... Drlg. gumbo 1,729 ft.

SORRENTO—ASCENSION PARISH

Union Sulphur Co.'s No. 1 Lacey Frank, 1,640 ft. N, 1,175 ft. W, SE cor. Sec. 16-10s-4e ..... No report.

STARKS—CALCASIEU PARISH

Gulf Ref. Co.'s No. 11 Latcher-Moore (D.D.), 1,270 ft. W, 885 ft. N of SE cor. NE Sec. 19-9s-12w..... Pulling screen to deepen 4,204 ft.

Union Sulphur Co.'s No. 3 Industrial, 1,245 ft. N, 390 ft. E of SW cor. Sec. 20-9s-12w ..... No report.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 723 fee (W.O.), 1,179 ft. N, 640 ft. W of SE cor. SW NW Sec. 29-9s-10w ..... T.D. 4,273 ft.; P.B. to 3,500 ft.; drlg. deeper.

Union Sulphur Co.'s No. 757 fee, Sec. 29-9s-10w, 300 ft. W of C section ..... Drlg. 5,045 ft.

Union Sulphur Co.'s No. 783 fee, Sec. 29-9s-10w ..... Salt 5,117-5,761 ft.; sidetracking at 4,509 ft.; drlg. at 4,509 ft.

Union Sulphur Co.'s No. 785 fee, 836 ft. N, 703 ft. E of center of Sec. 29-9s-10w ..... Drlg. sand 3,485 ft.

ST. BERNARD PARISH

Southern Sulphur Co.'s No. 1 Lake Lery, 400 ft. W, 500 ft. N, SW cor. Sec. 28-13s-15e ..... Drlg. 656 ft.

Southern Sulphur Co.'s No. 1 State Lake Bargne, 850 ft. N, 330 ft. E, SE cor. Sec. 33-13s-15e ..... Drlg. 710 ft.

ST. LANDRY PARISH

H. H. Hotchins Lbr. Co.'s No. 1 Whiteman Lbr. Co., 250 ft. out of SW cor. NE Sec. 15-5s-6e ..... W.O.C. 710 ft.

ST. MARTIN PARISH

E. R. Bram et al's No. 1 Toby, 2,600 ft. northwesterly along Bayou Teche from S, or out of SE cor. of Sec. 105, being point where bayou crosses twp. line, thence northeasterly at right angles 660 ft., in Sec. 105-8s-5e ..... Drlg. shale 2,020 ft.

Standard Oil Co. of Kansas' No. 1 E. B. Hopkins, Sec. 33-10s-6e ..... S.D. 6,010 ft.

TERREBONNE PARISH

Texas Co.'s No. 6 State Bay-St. Elaine, 700 ft. S of No. 3, Sec. 17-22s-18e ..... Drlg. sand 3,652 ft.

Texas Co.'s No. 9 State-Lake Pelto, 4,066 ft. N, 491 ft. E of SW cor. Sec. 9-23s-18e ..... Abd. 3,536 ft.

VERNON PARISH

E. Dawson's No. 1 Delta Land & Timber Co., C SW SW Sec. 2-1n-11e ..... Drlg. 2,820 ft.

TEXAS

MISCELLANEOUS WILDCATS

AUSTIN COUNTY

Turnbull et al's No. 1 Watson, Stephen F. Austin Sur. No. 6, 150 ft. out of SE cor. of 115.6-ac. tract ..... Drlg. shale 5,236 ft.

BRAZORIA COUNTY

Danciger O. & R. Co.'s No. 2 Hunt, 6,550 ft. E line, 5,550 ft. S line, W. Carson Sur. ..... No report.

BRAZOS COUNTY

F. H. Scott's No. 1 Klintworth, I. Curd Sur., 300 ft. from N line, 400 ft. from E line ..... Drlg. shale 1,200 ft.

CHAMBERS COUNTY

Mills & Jones' No. 1 Gau, John S. Roberts Sur., 255 ft. W, 1,052.72 ft. S of NE cor. 133-ac. tract ..... Coring 5,112 ft.

Smith & Lavender's No. 1 McCormick, F. Ludlow Sur., 150 ft. NE cor. ..... Derrick.

COLORADO COUNTY

Humble O. & R. Co.'s No. 1-C Powell, I.&G.N.R.R. Sur., 1,036 ft. E, 578 ft. S of NW cor. Blk. 48..... No report.

Plymouth Oil Co.'s No. 1 Broussard, 2,306 ft. N and 436 ft. W of SW cor. Sec. 47, I.&G.N. Sur. ..... No report.

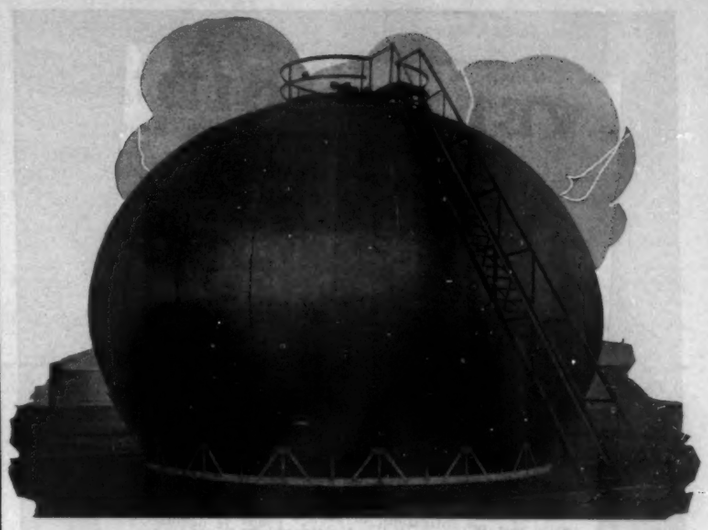
Weimar Oil Co.'s No. 1 Miller ranch, approx. center H.&T.B. Sur. No. 9 ..... Derrick.

FORT BEND COUNTY

Fresno Oil Corp.'s No. 1 M. T. Wood, T. Gleason Sur., center of 10-ac. tract (Blk. 474) ..... T.D. 4,701 ft.; sidetracked at 2,890 ft.; drlg. 2,625 ft.

GRIMES COUNTY

Cambrian Oil Co.'s No. 1 W. V. Sangster, John Moore Sur., 300 ft. out of most westerly NW cor. of 218-ac. tract ..... Derrick.



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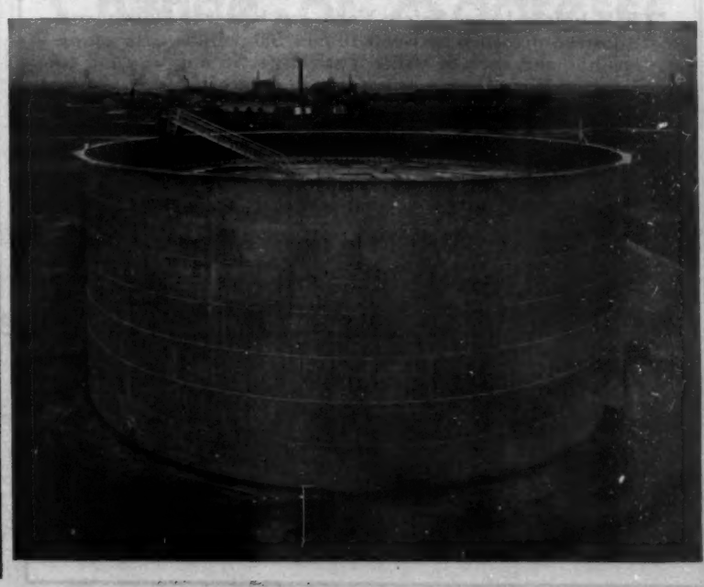

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Bend Vellumoid any way you want to—crumple it up—treat it rough—and see how nicely it stands this treatment without cracking or being injured in any way for service.

Vellumoid is a tough, compressible sheet Packing which Oil and Gasoline do not attack, and which lasts as long as the flange itself.

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We can be of real service to you on your gasket problems

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THE Fulton Lever Safety Valve can be set to blow at any desired pressure between 10 and 100 pounds. Its action is positive and sure. It will not stick, nor in any way fail to relieve the line of excess pressure in case of need.

FOR low-pressure distribution, between the high-pressure and the low-pressure regulators, it is advisable to have a lever-type Safety valve. In fact such a valve is recommended for any service involving pressures of 5 to 100 pounds, while for lower pressures, dead-weight valves are available.

FULTON Safety Valves are of special design and superior workmanship and have been proved by many years of unfailing service. Correspondence is invited regarding C-F Gas Regulators, Safety Valves and other requirements for gas control. Descriptive leaflets will be mailed on request.

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Or any Jobber

Foster et al's No. 1 Quinn, 7,100 ft. from W line, 3,900 ft. from N line of S. F. Austin Sur. ..... Digging pits.

Petroleum Southwest Co.'s No. 1 Greer, Pat O'Connor Sur., 300 ft. from W line, 400 ft. from N line of 150-ac. tract ..... No report.

HARRIS COUNTY

Cockburn Oil Corp.'s No. 1 C. Marcus, Wm. Hardin Sur., 1,500 ft. S along E line of 55-ac. tract from Buffalo Bayou and 300 ft. W at right angles ..... Drlg. shale 4,346 ft.

H. B. Jordan's No. 1 Cochran, J. L. Jordan Sur., 1,950 ft. S line, 1,930 ft. E line ..... Standing 2,045 ft.

McCarthy et al's No. 1 Harrison, 500 ft. S, 500 ft. E of NW cor. of Wm. M. Jones Sur. ..... Drlg. shale 5,500 ft.

Russell et al's No. 1 Burt & Griffith, S. Keely Sur., 200 ft. N line, 200 ft. E of highway ..... Derrick.

Jack Schultz et al's No. 1 West Prod. Co., Geo. Dedrick Sur., 800 ft. W of R.R., 100 ft. N of S line ... T.D. 3,414 ft.; cmtd. 7-in. csg. 3,400 ft.; drilled plug and set screen.

S. J. Sloan's No. 1 Ellis, 658 ft. from N line, 1,130 ft. from W line of Sec. 22, Geo. Ellis Sur. ..... Rig.

E. E. Young et al's No. 1 Paddock, J. Cunningham Sur., 300 ft. W of E line of Blk. 41 on line dividing Blks. 46 and 47 ..... Drlg. shale 600 ft.

JACKSON COUNTY

Continental Oil Co.'s No. 1 Vincek, V. Garcia Sur., 1,800 ft. W, 200 ft. N of SE cor. of Lot 17, Bennett Subd. ..... Drlg. shale 1,830 ft.

JEFFERSON COUNTY

Sun Oil Co.'s No. 1 Paggi, 990 ft. W, 1,610 ft. N of SE cor. of T.&N.O. Sur. No. 32 ..... Drlg. shale 5,826 ft.

LIBERTY COUNTY

J. K. Seale, tr.'s No. 1 T. W. Finley, A. B. Hardin Sur., 330 ft. out of SW cor. of 25-ac. tract ..... Derrick.

Yount Lee Oil Co.'s No. 1 E. W. Boyt, H.&T.C. Sur., Sec. 17, 300 ft. from S line, 2,440 ft. from E line of section ..... Drlg. shale 9,812 ft.

MATAGORDA COUNTY

Continental Oil Co.'s No. 1 Baker, 400 ft. out of SW cor. Lot 17, Robbins & Middle Subd., J. W. Criswell Sur. ..... Drlg. shale 5,676 ft.

Oils Consolidated, Inc.'s No. 1 Hawkins, Daniel McCarthy Sur., 1,340 ft. NE, 350 ft. NW of S cor. ... Moving in.

United North & South Dev. Co.'s No. 1 Unit 6 (No. 2 Stoddard), 25 ft. each way out of NW cor. of Lot 19, Buckeye Townsite ..... T.D. 7,872 ft.; set 23 ft. screen 7,872 ft.; swbd. S.W.

United North & South Dev. Co.'s No. 1 Unit 14 (No. 1 Dr. Plotner), 1,210 ft. SE of No. 1 Stoddard and 136 ft. W of right of way of Collegeport branch of St. L.&B.M.R.R., Buckeye ..... Set 216 ft. of 5-in. screen 7,910 ft.; swbng.

United North & South Dev. Co.'s No. 1 Unit 25, 1,335 ft. S, 1,000 ft. E of No. 1 Unit 6 ..... Cutting and pulling screen 7,870 ft.

MONTGOMERY COUNTY

McElroy Oil Corp.'s No. 1 McWhorter, T. J. Nichols Sur., 390 ft. N of center of W 1,000 acres of McWhorter's 3,000-ac. farm ..... S.D. 2,165 ft.

POLK COUNTY

Dick Schwab's No. 1 Kirby & West, Geraldus Thomas Sur., 1,000 ft. N of N line of P. A. Sublett Sur., and 3,000 ft. W of E line of Thomas Sur. ..... Derrick.

C. E. Stewart's No. 1 Stephenson, E. Stevenson Sur. (Abst. 761), 1,633 ft. from N line, 920 ft. from W line of 217 acres ..... Rig.

REFUGIO COUNTY

Humble O. & R. Co.'s No. 8 O'Connor, 13,350 ft. N of S line of lease and 12,727 ft. W of E line of Florentine Rios Sur. ..... Drlg. shale 2,490 ft.

Texas Co.'s No. 1 Rooke, J. M. Aldritte Sur., 7,500 ft. S 53 deg. W, 850 ft. 37 deg. W of N cor. Sur. ..... Cmtd. 20-in. csg. 90 ft.

SAN JACINTO COUNTY

Piedmont Oil Co.'s No. 1 Foster Lbr. Co., 500 ft. out of NW cor. of G. Taylor Sur. ..... Drlg. sandy shale 4,296 ft.

TYLER COUNTY

Texas Crude Oil Co.'s No. 1 Creswell, B. Enloe Sur., 300 ft. S of NE cor. of survey and 400 ft. W of E line ..... Drlg. shale 1,640 ft.

VICTORIA COUNTY

Gulf Prod. Co.'s No. 4 Keeran, Martin DeLeon Sur., 3,330 ft. N 41 deg. 43 min. W, parallel to NE line of lease from No. 1 ..... Drlg. wtr. sand 6,148 ft.

Stoneleigh O. & G. Co.'s No. 1 Zimmer, R. Manchola Sur., 1,097 ft. SW line, 645 ft. SE line ..... No report.

The Texas Co.'s No. 6-A McFaddin, 5,600 ft. from NE line, 350 ft. from SE line of A. J. Gray ..... Gas sand 3,039-49 ft.; pumping wtr. and mud into sand to kill pressure.

The Texas Co.'s No. 7 McFaddin, 6,600 ft. S 15 deg. W, 450 ft. N 75 deg. W at right angles from the NE cor. of the A. J. Gray Sur. ..... T.D. 1,176 ft; blowing gas and mud.

WALLER COUNTY

Franklin et al's No. 1 A. C. Blumberg, John Baker Sur., 466 ft. out of NE cor. of most northerly 100-ac. tract ..... Drlg. shale 1,806 ft.

Hobson & Moore's No. 1 Petera, Justo Liendo Sur., 590 ft. W of creek and 1,144 ft. N of S cor. ..... Drlg. shale 1,825 ft.

Texas Seaboard Oil Co.'s No. 1 B. Schwartz, Isaac Best Sur., 1,050 ft. from S line, 1,100 ft. from E line of 800-ac. tract ..... Drlg. sand and shale 3,723 ft.

WASHINGTON COUNTY

Clark & Cowden's No. 1 F. A. Ammons, S. Woodward Sur., 16,500 ft. from N line, 775 ft. from E line of survey ..... No report.

George W. Strake's No. 1 Henry Wehmeyer, M. Byrd Sur., 3,000 ft. from W line, 500 ft. from N line of 599.50-ac. tract ..... Drlg. shale 3,595 ft.

WHARTON COUNTY

Boggs & Hammond's No. 1 C. T. Kountze, Morris & Cummings Sur., 1,250 ft. S line, 2,750 ft. E line .... Spudded.

Nabers et al's No. 1 Lurker, 210 ft. out of SE cor. of N½ SW Sec. 58, E.T.R.R. Sur. ..... Washing to bottom 5,026 ft.

Pure Oil Co.'s No. 1 W. Garrett, Sec. 28, 4,456 ft. SE, 1,690 ft. NE of W cor. ..... Drlg. shale 1,538 ft.

Pure Oil Co.'s No. 1 A. J. Wilder, T. W. Hurd Sur., 509, 2,575 ft. SE, 1,690 ft. NE from W cor. of Sec. 28. Drlg. sand and shale 470 ft.

Pure Oil Co.'s No. 1 Stewart, 2,419 ft. NW, 1,650 ft. NE of S cor. of Sec. 25, Morris & Cummings Sur. .... T.D. 8,015 ft.; set whipstock 6,795 ft.; sidetracking hard shale 7,890 ft.

Pure Oil Co.'s No. 1 Chas. T. Kuntze, 2,133 ft. from NW line, 467 ft. from SW line, Sec. 27, Morris & Cummings Sur. ..... Drlg. shale 6,382 ft.

Pure Oil Co.'s No. 1 W. H. Lancaster, Morris & Cummings Sur., Sec. 23, 1,650 ft. NW, 1,600 ft. SW of E cor. of section ..... Cmtd. surface csg. 1,154 ft.

Pure Oil Co.'s No. 1 Wallace Houston, 953 ft. SE of NW line and 1,690 ft. NE of SW line, Sec. 28, (T. W. Heard Sur.) ..... Moving in.

Pure Oil Co.'s No. 1 Isaac Weaver, J. M. Brownson Sur., Sec. 22, 1,650 ft. out of N cor. of section .... Cmtd. surface csg. 1,130 ft.

Smith, McDannald and Pure Oil Co.'s No. 1 B. M. Yeamans, 330 ft. out of N cor. of B. M. Yeamans Sur., Abst. 913 ..... Cmtd. 13⅜-in. csg. 1,200 ft.

Smith & McDannald and Shell Pet. Corp.'s No. 1 Ridgeway, 1,886 ft. from S, 660 ft. from W of NE cor. Sec. 8, H.&T.C. Sur. ..... Drlg. sticky shale 7,541 ft.

California Fields

(Continued from Page 54)

County in Section 12-12-111, blew in during the early part of the current week flowing approximately 700 bbls. of water and 30,000,000 feet of natural gas per day during a production test conducted at 4,150 feet, following the landing of a 6⅝-inch combination string carrying 680 feet of perforated and cemented through perforations at 3,480 feet. The company is endeavoring to locate the point at which water is entering the hole and if this can be excluded, may be in a position to finish a commercial gas producer. This well, due to the large amount of natural gas produced, may prove of considerable importance from an economic standpoint if water can be excluded from the hole.

Long Beach

Two new wells were put on production in the Long Beach Field of Los Angeles Basin during the early part of the current week and one or more completions are expected to be chalked up within the next 10 days. The Ellroy Petroleum Corp. successfully completed No. 1 Signal pumping 155 bbls. of 25.2 gravity oil per day from 5,131 feet after finishing the hole with a 4¾-inch perforated liner. Just previous to this completion, the R. R. Bush Oil Co. completed No. 1 fee pumping 212 bbls. of 28.6 gravity oil per day from 3,860 feet. Several new wells are being rigged up for early work in the Long Beach Field and, judging by the status of work now under way we may anticipate the completion of a normal amount of work during the next 15 days. W. H. Brayton is building a new rig over the Wilshire Oil Co.'s No. 1 Brayton, which was abandoned several years ago at 3,807 feet, and this well will be carried down to approximately 5,450 feet, at which point commercial production is anticipated. The Winshale Oil Co. has taken over the Kale property, originally developed by the Petroleum Securities, and will attempt to plug back No. 1 Kale, abandoned at 7,500 feet, and finish as a commercial producer after perforating the pipe higher up in the hole. The Shell Oil Co. drilled No. 40 Alamitos into bottom water at 5,034 feet but has subsequently plugged back to 4,985 feet and is finishing the hole with a 4¾-inch liner carrying 192 feet of perforated. The Cordova Oil Co. has taken over the lease held heretofore by C. A. Spath and contemplates early work.

Eastern Fields

(Continued from Page 57)

sands of Medina County, where Preston Oil Co. completed No. 5 on the L. A. Severcool farm, Tract 16, Lot 4, Chatham Township. It was drilled in the Berea grit at 334 feet and produced 20 bbls. the first day after shot. In the same township, but Tract 10, Lot 3, Oko Oil & Gas Co. completed No. 37 on the Sanford and Watson lease. It reached the Berea grit at 355 feet and produced 5 bbls. the first day after shot.

In Hocking County, Ohio Fuel Oil Co. completed No. 1,523 on the Sunday Creek Coal Co. tract in the SW Section 18, Ward Township. It was drilled in the Clinton sand to 3,468 feet and is a small gas well, gauging at about 130,000 feet a day. There was no showing of oil, and it is being tubed for gas.

In Noble County, in the SE Section 6, Enoch Township, D. J. Peaker and others drilled a test on the Mary Webber and Allie Cain farm. It went through the Buell Run sand at 245 feet and there was no showing of oil or gas.

In Washington County, Martin Oil Co. completed a small pumper on its own property, Lot 1,078, Palmer Township. It was drilled in the First Cow Run sand at 647 feet and is making a showing for a 1-bbl. pumper.

SOUTHWEST PENNSYLVANIA

The test of the Carnegie Natural Gas Co. on the H. H. Wells farm in Jefferson district, Fayette County, reached 2,901 feet and found the Bayard sand dry. It will be drilled to the Richards sand. There was a very small showing of gas in the 30-foot sand.

One producer was completed in southwest Pennsylvania. In Greene Township, Greene County, J. L. Garard & Co. completed a test on the John Sicklesmith farm in the Dunkard sand at a depth of 670 feet. It will make a 1-bbl. pumper.

In Greene County, Convex Glass Co., drilling a test on the Samuel Morse farm in Dunkard Township, Completed it in the Injun sand as a small gas well. The top of the Big Injun sand was at 1,395 feet and reached 1,500 feet. About 50,000 feet of gas was struck at 1,487 feet.

In Springhill Township of the same county, Earhart & Co. are past the gas sand on the W. J. Holmes farm. The gas sand extended from 1,023 to 1,084 feet. There was a show of gas at 1,082 feet estimated at about 25,000 feet a day. In Perry Township, Carnegie Natural Gas Co. has reached 2,450 feet in drilling deeper its No. 2 on the Leasure Cowell farm.

In Washington County, E. H. and J. B. Tague have started drilling their No. 6 on the Adaline D. McKennan estate in South Franklin Township. In East Findley Township, Hallam and Lewis and others are down 1,300 feet on the H. D. Ely farm. The Pittsburgh Coal was at 792 feet.

In Amwell Township, Washington County, Jesse Moore & Co. have abandoned their test on the John Parker as a dry hole and will not shoot it. Here, the Union Gasoline & Oil Co. has reached 1,715 feet on the Leroy VanKirk farm.

In Center district, Greene County, W. H. Scott has the material on the ground on the J. B. Orndoff farm. It is about 1 mile west of Rutan Crossroads on the waters of Miranda Run.

RUSSIAN OIL FINDER?

The New York Times describes a new measuring rod invented by two young Soviet scientists, Sobolov and Gurevich, which taps the surface and tells whether there is oil below. It cannot determine the amount but can tell the extent of the area.

AQUAGEL

Trouble-Proof Colloidal Drilling Mud

Aquagel makes a drilling mud that prevents loss of circulation, stuck drill pipe and casing. *Aquagel* reduces abrasion, suspends drilling mud solids and seals off fissures and caves.

Aquagel prevents costly fishing jobs and saves time and money. Widely used throughout the world for safety and economy.

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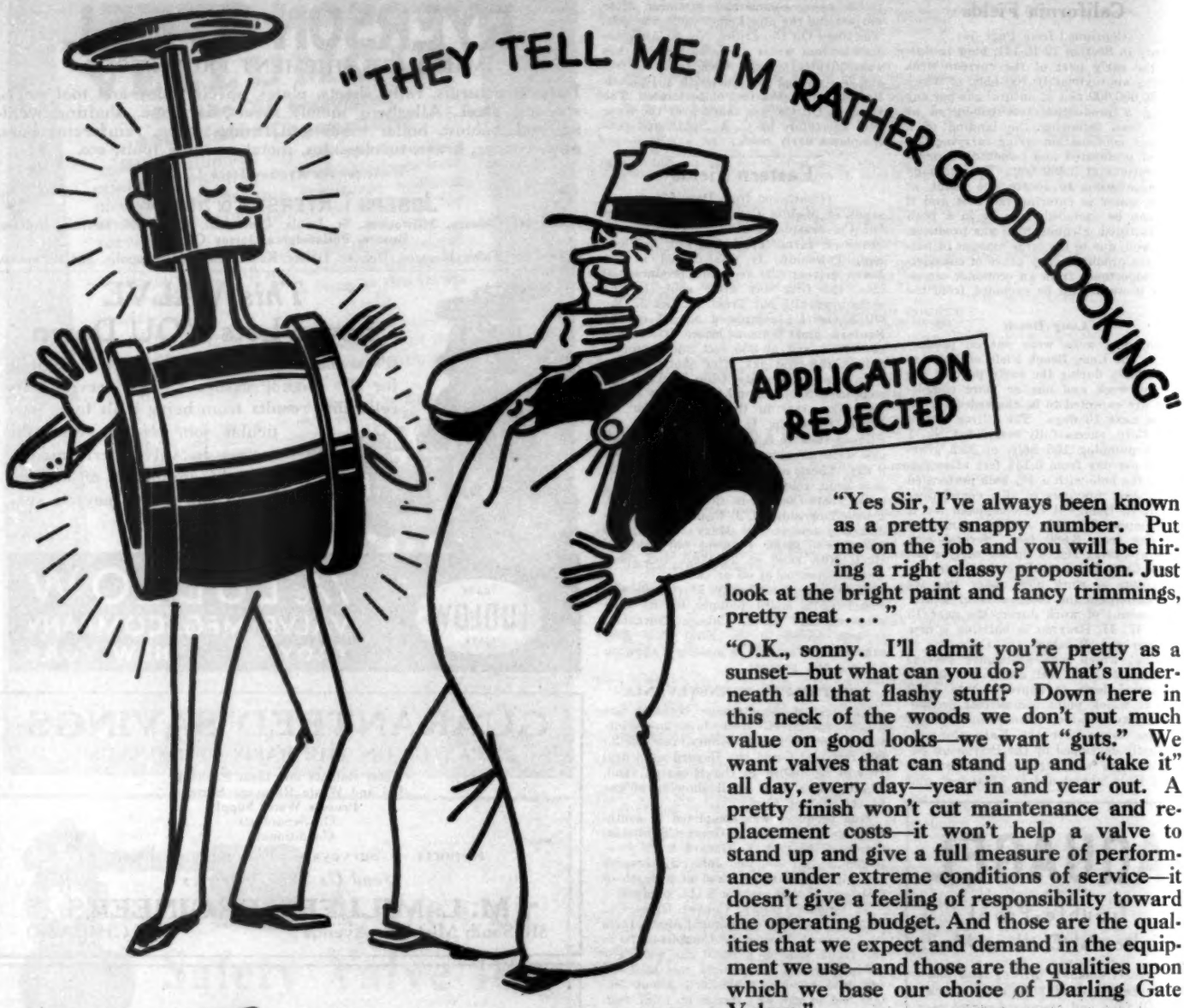

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DARLING
GATE VALVES

PERSONAL PARAGRAPHS

Walter J. Boyle, geologist, is now in Southwest Texas for the Phillips Petroleum Company.

* * *

W. R. Thawley, chief scout, Gypsy Oil Company, Tulsa, is spending his vacation at his old home in Laurel, Md.

* * *

J. W. Selby, chief scout for the Shell Petroleum Corporation, Houston, Tex., is vacationing in Dallas and North Texas.

* * *

R. G. Martin, purchasing agent, Deep Rock Oil Corporation, with his family, are visiting his parents in Kentucky.

* * *

J. C. Long, purchasing agent, Shell Petroleum Corporation, is spending his vacation at Florence, Ala., his old home town.

* * *

W. J. Hardy, scout for the Sun Oil Company, San Antonio, Tex., is spending his vacation on the Gulf Coast, swimming and fishing.

* * *

Charles F. Strover has been appointed salesmanager of the oil well pump division of Pacific Pump Works, Huntington Park, Calif.

* * *

D. H. Collins, formerly buyer for the Independent Oil & Gas Company, has returned to Tulsa after spending the summer in Missouri.

* * *

Henry Pagny, Vacuum Oil Company engineer, stationed in Paris, France, is visiting the New York headquarters office of the company.

* * *

W. H. Correa, a director of the Standard Oil Company of New York, accompanied by his family, arrived at New York last week from a European trip.

* * *

Earl Broberg, mechanical engineer, Parkersburg Rig & Reel Company, Tulsa, has recently returned from a trip to the company headquarters at Parkersburg, W. Va.

* * *

Paul Mahaffey, Happy Belting Company, Tulsa, who has been a surgical patient at St. Johns Hospital, Tulsa, underwent an operation which involved amputation of the left leg above the knee.

* **

G. Gordon Bell, R. S. Carder and E. E. Soubry have been added to the directorate of the Anglo-American Oil Company, Ltd. Mr. Carder is secretary of the company and Mr. Soubry general salesmanager.

* * *

W. G. Gish, in charge of the land and geological departments of the Sinclair Prairie Oil Company, Fort Worth, Tex., and family, have motored to Santa Fe, N. Mex., and parts in Colorado for a two weeks' vacation.

* * *

W. B. Hamilton, formerly assistant deputy railroad commission superintendent in the Panhandle, Texas, district, has taken a position with Philtex Oil Company and Bartex Pipe Line Company, as state agent. His headquarters will probably be in Pampa, Tex.

* * *

Dick Tullis, former independent oil man, of San Antonio, Tex., has left for Mexico City to establish his headquarters as trade commissioner from the United States to the southern republic. Mr. Tullis formerly operated in the West Texas fields and is well known to North and West Texas oil men.

* * *

J. A. Brown, president of the General Petroleum Corporation, and holding a similar office with the California Oil and Gas Association, has been appointed a colonel in the Los Angeles Chamber of Commerce Recovery Army to organize the California oil industry in the drive for signatures to President Roosevelt's re-employment agreement under the National Recovery Act.

Col. T. H. Barton, president of Lion Oil Refining Company, El Dorado, Ark., is visiting in New York.

* * *

Charles G. Carlson, consulting geologist, Tulsa, has recently been in the Michigan oil fields on professional business.

* * *

L. W. Sproule, B. Sc., of Imperial Oil, Ltd., left recently via Quebec for France where he will be employed in chemical research.

* * *

Clyde G. Gray, oil producer, Tulsa, has returned from a summer vacation spent with his family in the mountains of New Mexico.

* * *

Ralph Van Matre, of the Pacific Pump Works, Huntington Park, Calif., has been transferred to Tulsa to assist Roy Dunbar of the Mid-Continent Pump Supply Company.

* * *

J. A. LaFortune, vice president of the Warren Petroleum Company, Tulsa, is recovering from a recent operation for appendicitis. He is now spending a vacation period in Indiana.

Men of the Industry

C. D. BUFFETT

C. D. Buffett, acting division superintendent of the Rocky Mountain division of the Stanolind Oil & Gas Company since December 1, 1932, joined that organization when it took over the properties and operations of the Midwest Refining Company. The division of which he is superintendent embraces three States, Colorado, Wyoming and Montana.

Mr. Buffett entered the service of the Midwest in 1922, working successively in the warehouse, drilling and petroleum engineering departments. In 1927 he was transferred to the petroleum engineering department in the Casper office of the Midwest Refining Company. In 1929 Mr. Buffett returned to Salt Creek to take charge of the petroleum engineering department in that field. In 1930 he became assistant superintendent in charge of production for the Salt Creek Field and in 1931 was made field superintendent.

Mr. Buffett was born in Omaha, Neb., and was educated in the public schools there. He graduated from the University of Nebraska with the degree of A.B., specializing in petroleum geology. He is married and has two sons.

E. J. Sours, buyer for the Skelly Oil Company, spent his vacation in Missouri during the latter part of August.

* * *

W. R. Brown, purchasing agent, Mid-Kansas Oil & Gas Company, and family, spent their vacation in the Missouri Ozarks.

* * *

C. A. Prichard, purchasing agent, Mid-Continent Petroleum Corporation, visited Kansas City, Mo., and Waterloo, Iowa, last week.

* * *

O. G. Jackson, purchasing agent, Eldorado Refining Company Eldorado, Kans., has returned from his vacation in the Ozark region.

* * *

W. W. Runkle, district salesmanager for the Hazard Wire Rope Company, Fort Worth, Tex., has returned from a business trip to New York.

* * *

Don C. Myers, purchasing agent, O.C.S. Manufacturing Company, Coffeyville, Kans., with his family, is visiting Cleveland, Ohio; Detroit, Mich., and Chicago.

* * *

C. L. Regan, petroleum engineer for the Stanolind Oil & Gas Company, Willow Springs, Tex., has just returned from a vacation spent at Boulder and Colorado Springs, Colo.

* * *

Miss Louise Pilcher, in the scouting department of the Pure Oil Company, Fort Worth, Tex., is spending her vacation seeing the Century of Progress Exposition at Chicago.

* * *

L. B. Holland, division superintendent, Texas division, Phillips Petroleum Company, with headquarters at Breckenridge, Tex., was in Oklahoma on a short business trip last week.

* * *

Tronson Draper, formerly production manager for Imperial Oil, Ltd., in western Canada and who has been in the East for some years, recently revisited Calgary and the Turner Valley. Field.

* * *

E. N. Van Duzee, district superintendent, Shell Petroleum Corporation, McCamey, Tex., district, is being transferred to Iowa, La. "Red" Wells, assistant superintendent of East Texas, will be moved to McCamey.

* * *

John P. Bickell and Carle C. Conway have been elected directors of Carib Syndicate, Ltd., which has an interest in the Barco oil concession in Colombia. Mr. Bickell is a partner in Thompson & McKinnon, while Mr. Conway is chairman of the board of Continental Can Company.

* * *

Charles Gill Morgan, graduate and former instructor of geology at Southern Methodist University, Dallas, Tex., has been appointed chief geologist and geophysicist of the second Byrd Antarctic expedition which will sail from Boston on September 15. Mr. Morgan is now seismologist of the Geophysical Research Corporation.

* * *

General Manager S. B. Severson, of Buffalo, N. Y., his son and a number of company drillers, were guests at the annual picnic given for employes of Dominion Natural Gas Company from various southwestern Ontario points at Port Dover. Upwards of 300 people participated with Superintendent Carl H. Lutz in charge of the sports program.

* * *

Several French geologists who came to the United States to participate in the recent International Geological Congress in Washington sailed from New York for home this week on the French Line steamer De Grasse. In the party were Guy Delacote, mining engineer of Clermont; Louis Neltner, professor at the Mining Institute of St. Etienne; Prof. Paul Fallat, of the faculty of sciences of the University of Lyons; Prof. Pierre Pruvost, Prof. Albert Roman, and Eugene Raguin, mining engineer.

NATURAL GAS DEVELOPMENTS

Lone Star Gas Arguments Before Texas Commission

AUSTIN, Tex., Sept. 4.—A recommendation has been made to the Railroad Commission by W. C. Fitzhugh, assistant director of the gas utilities division, that a 20 per cent reduction be made in city gate rates charged by the Lone Star Gas Co. Gate rates in approximately 250 cities and towns served by the company would be affected.

The commission has not yet formally considered the recommendation.

L. B. Denning, president of the Lone Star Gas Co., makes the following statement:

"Regardless of the recommendation by Mr. Fitzhugh, counsel for the Railroad Commission, there is no thought in the minds of Lone Star Gas Co. officers of any reduction in the city gas rate at the present time or in the immediate future.

"With revenues reduced as they have been during the past several years owing to the general depression and the low price of competitive fuel oil, the company has not earned a fair return even upon the ridiculously low valuation reported by the commission's engineers.

"Manifestly with the increase in operating expenses due to compliance with the NRA code, earnings will be further aggravated. Should the recommendation of Mr. Fitzhugh be followed, when the case has been judicially reviewed by the courts, the company will show that it is justly entitled to a minimum city gas rate of not less than 45 cents instead of the existing 40-cent rate."

The State's case was presented by W. C. Fitzhugh, assistant director of the gas utilities division of the commission. Testimony at hearings in Fort Worth before an examiner that lasted several months was reviewed. He said he believed $46,810,134 to be a fair appraisal of the company's property. A valuation of $73,927,635 has been claimed by the company for rate-making purposes. The company carried its pipe purchases on the books at the quoted price, Mr. Fitzhugh said, but the commission's appraisers said it was buying it at a discount.

Karl F. Griffith, attorney for the company, said the commission's appraisers were without the experience necessary to make an adequate appraisal. The contention was made that the commission's appraisers never operated, designed or constructed a gas system of any appreciable size. He said this was their debut in the field of public utility appraisal.

The pressure decline test used by the commission's appraisers in arriving at the value of the producing properties was attacked and the claim was made that the commission's appraisal was a series of deductions and eliminations from figures prepared by the company's engineers.

Mr. Griffith said that on the basis of the commission's appraisal such a reduction would so reduce the revenue that the total available for depreciation and return would be approximately 4 per cent. The present return was inadequate and a reduction would be virtual confiscation.

GAS VOLCANO IN HUNGARY

A natural gas volcano, which erupted near Mediasch, Hungary, has brought an almost equatorial climate in a 10-mile radius. Vegetation has flourished, corn has shot up into the air and crops have matured early. Unless the flow is harnessed, the now burning gas is expected to keep the country green all winter. Farmers are speculating on the chances of a midwinter harvest. Efforts have been made to harness the geyser, but so far they have failed.

Code for Carbon Black Manufacturers Seeks Price and Control of Output

By A. E. MOCKLER
New York Bureau, The Oil and Gas Journal

NEW YORK, Sept. 4.—Carbon black manufacturers have completed plans for production and price stabilization through a code of fair competition, under consideration by the NRA. The code provides for a maximum week of 48 hours, with minimum wages for mechanical labor at 40 cents an hour in Louisiana, 50 cents an hour in Oklahoma and Stephens County, Texas, and 45 cents elsewhere, with a minimum of 40 cents per hour for clerical and office employes. Employes are not to be charged rental for company houses in excess of $12 per month in Louisiana or $16 elsewhere.

The code provides that each producer shall, so far as possible without infringing existing obligations for the purchase of gas, so regulate its current production of all ordinary grades of carbon black as to prevent the same from exceeding its current deliveries. In case in any period of six calendar months the quantity of such black held in storage by any producer shall increase (except through purchase of black or unavoidable purchase of gas) such producer shall reduce its storage protanto during the next six months, and failure so to do shall be deemed an unfair method of competition within the meaning of the NRA act. The present capacity of carbon black factories in the United States is in excess of any prospective needs. Therefore it will be considered a violation of the industry's code to make any material increase in the plant capacity during the life of the National Recovery Act.

Each producer shall on September 6, or on such later date as the emergency national committee shall designate, file with the secretary of that committee a statement of the minmum price to customers thereafter to be quoted by it for the ordinary grades of carbon black sold by it. No producer shall make or quote any price lower than that filed until five days after filing with the secretary a new minimum price; nor shall any producer or its agent offer or grant any terms, inducements, rebates, or conditions having the effect of reducing the cost to the customer below its minimum price at the time in effect, nor shall any producer or its agent suggest, intimate, or promise to a customer at any time a future price below such minimum price. The secretary shall immediately notify each producer, by telegraph and by letter, of all initial minimum prices filed and of all price changes thereafter made by any producer.

If the initial price filed by any producer shall be lower than that filed by another producer, such other producer shall have the right to reduce its price to the lower rate by notiification to the secretary of the committee effective immediately, and upon any existing price being reduced by any producer, upon five days' notice any other producer shall be at liberty to adopt said new minimum price as its own as soon as the same shall become effective, and such producer shall give to the secretary written notice of its adoption of said new minimum price at or before the time such action is taken.

The price provisions of the carbon black code are subject to the following exceptions:

1. In making sales of carbon black to another concern which is bound by the provisions of the code, a producer may allow any discount it may see fit.

2. In making sales to a jobber, a producer may allow a discount not exceeding 5 per cent.

3. Sales of carbon black below standard quality may be made at any price or prices authorized by the emergency national committee.

Any violation of the provisions of the code covering prices are to be deemed unfair competitive prices, although the provisions of the code with respect to quotations are not to apply to contracts for 1933 delivery made prior to the effective date of the code.

The carbon black industry's code will be administered by an emergency national committee, to consist of one representative designated by each producer who is or shall become a member of the National Gas Products Association, the organization which formulated and filed the code. Members of the committee will serve until June 15, 1935.

Manufacturers representing more than 90 per cent of the carbon black capacity of the United States are members of the association, which is open to any producer of carbon black.

Propose Gas Line to Ada From Pontotoc County

A pipe line outlet for the John Fitts gas field in southern Pontotoc County, Oklahoma, has been assured with survey for a 14-mile line from the field to Ada by the Stonewall Gas Co. The firm was organized by Gus Delaney, Curt King and Sam Miller. At Ada it will deliver gas to the Southwest Gas & Utilities Co., which supplies the city.

There are two gassers in the area, both drilled by W. A. Delaney and others, in Section 30-2n-7e. The discovery did around 50,000,000 feet a day, while the second well was almost as large.

The company is contemplating a test on the John Craddock farm in NE NE, Section 25-2n-6e, north and west of the discovery wells.

EDMONTON GAS PICNIC

CHATHAM, Ontario, Sept. 2.—Employes of Northwestern Utilities, Ltd., of Edmonton recently held their annual picnic at South Cooking Lake, when a recreation program was put on under the patronage of H. R. Milner, president, E. W. Bowness, vice president and Julian Garrett, general manager. Upwards of 160 attended.

ST. LOUIS CUT ASKED

ST. LOUIS, Mo., Sept. 2.—The city of St. Louis has forwarded a brief to the State Public Service Commission in Jefferson City, supporting its petition of July 3 for a 20 per cent reduction in the rates of the Laclede Gas Light Co. to domestic consumers instead of a 20 per cent increase.

MUSKEGON GAS EXTENSION

MUSKEGON, Mich., Sept. 4.—Continental Gas & Oil Co., subsidiary of Continental Motors Corp., has started laying a natural gas pipe line 3 miles long in the Muskegon Field to increase its supply to more than 1,000,000 feet a day.

Work on Faribault Line Is Nearing Completion

CHICAGO, Sept. 4.—Construction work on the 14½ miles of 18-inch natural gas pipe line from the Rochester, Minn., takeoff on the Minnesota Northern Natural Gas Co.'s line to Faribault, is expected to be completed by September 15. The new project, which is being carried out with a view of further extension north, possibly as far as the Twin Cities, begins 4 miles west of Owatonna and passes Faribault on the west. An 8-inch line will connect the main line extension with the Faribault city gate.

Until right of way to Twin Cities is definitely assured and suitable connections there are guaranteed, there will probably be no announcement in connection with extensions north of Faribault. However, it is understood, that negotiations are well under way on a continuation of the 18-inch line from Faribault to Rosemount, and a further extension of 12-inch line to South St. Paul.

Arizona Line Contract Awarded to Californians

EL PASO, Tex., Sept. 4.—It has been announced by H. G. Frost, vice president of the Western Gas Co. of El Paso, that $2,200,000 in cash has been placed in the Chase National Bank of New York, trustee, as a fund to be used in the construction of the extension of the company's pipe line system into southern Arizona.

The extension will be from a point near Douglas to Tucson and Phoenix, approximately 215 miles. The contract for the project has been awarded to the Bechtel-Kaiser Co. of California. Employment will be given to approximately 1,500 men for a period of five months which will be required to complete the pipe line. The company has made contracts for sale of natural gas to the distributing companies of Tucson and Phoenix where artificial gas is now being used.

Pipe Line Files Appeal From Commission Order

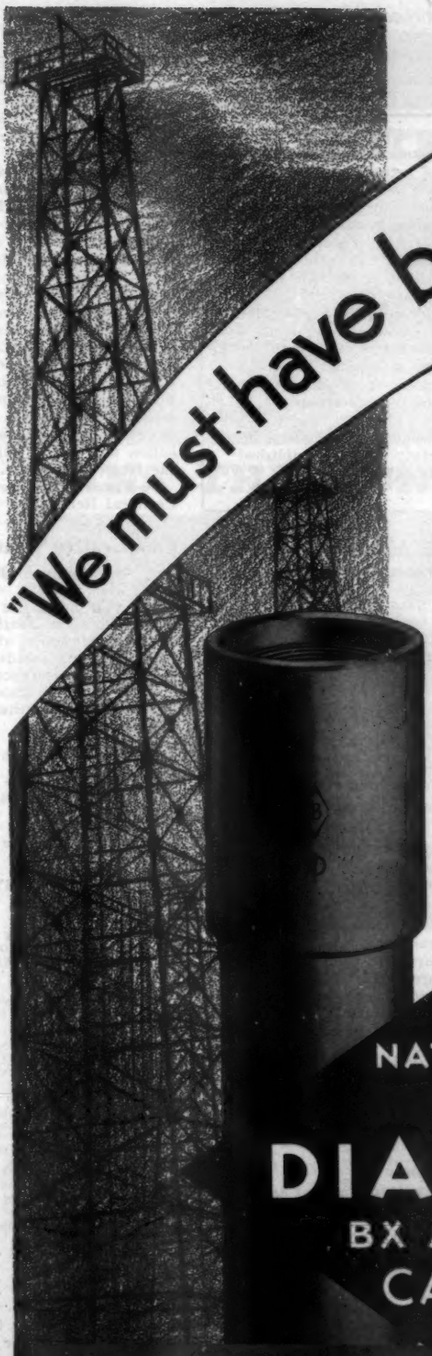
CHICAGO, Sept. 4.—Chicago District Pipe Line Co. has applied to U. S. District Court here for an interlocutory injunction against enforcement by the Illinois Commerce Commission of its order of June 16 directing the company to reduce the rates charged by it for natural gas delivered to Peoples Gas Light & Coke Co., Public Service Co. of Northern Illinois and Western United Gas & Electric Co. The commission estimated at the time the reduction ordered would amount to well over $1,000,000 a year.

Federal Judge Lindley set the case for hearing for September 25 before a three-judge statutory court.

The company's contention is that enforcement of the order would confiscate its property and be a burden on interstate commerce.

SAXET GAS FIELD

CORPUS CHRISTI, Tex., Sept. 4.—The chemical plant of the Southern Alkali Corp. at Corpus Christi is to be built at once according to announcement made at a dinner given by the people of Corpus Christi to officials of the company. The plant will be one of the largest in the county and purchase was made many months ago of extensive leases in the Saxet Field for gas for fuel supply for the plant. The building of the plant will necessitate further development of gas supply.



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First — There is no chance of NATIONAL Seamless splitting open several thousand feet underground because of hidden weakness in a weld—NATIONAL Seamless is pierced from a solid billet—there is no weld.

Second—Freedom from trouble, resulting in lower operating costs, makes economical the use of NATIONAL Seamless for drilling any well, regardless of depth.

Third — Over fifteen million feet without a single failure or a word of criticism is the record of NATIONAL Seamless in East Texas; and it is typical.

Fourth—Field men appreciate the economy of installation as well as the assurance of service that "Seamless" affords.

Fifth — It screws together smoothly, easily, and securely without loss of time either in making up or in testing leaky joints.

For safety—for economy—for durability—specify NATIONAL Seamless—

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SEAMLESS
PIERCED FROM SOLID BILLETS - NO WELDS

TECHNICAL QUESTIONS ANSWERED

By Charles K. Francis, Ph. D., Technical Editor

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible.

Inquiries must be signed but only the given initials will be printed. The source of the questions is considered to be confidential.

Questions requiring a discussion of patents, the use of intricate formulas, extended computations, or cost estimates cannot be considered.

When the matter is of general interest the reply will be published within a reasonable time.

Longest Pipe Lines For Gas, Oil, and Gasoline

Can you give me the names and location of the longest pipe lines for natural gas, crude oil, and gasoline?—O. G. C.

The gas line owned by the Natural Gas Pipe Line Co. of America, operating from the Panhandle of Texas to Chicago, a distance of approximately 950 miles, is the longest natural gas pipe line in the world. The capacity of this line is over 100,000,000 cubic feet a day.

The longest oil line in the world, now in operation as one unit, is that of the Sinclair-Prairie system, from Houston, Tex., to Chicago, a total of 1,197 miles. This is a multiple line with a capacity of approximately 125,000 bbls. per day.

The Iraq Petroleum Co. is now building a line for transporting crude oil, which when finished will be about 1,180 miles long. The starting point of this line is Kirkuk, Iraq, and the terminals Haifa, Palestine, and Tripolis, Syria; being a double line from Kirkuk to a point just west of the Euphrates River, where it bifurcates. The capacity of the double line is to be about 80,000 bbls. a day.

The Great Lakes Pipe Line, operating from Okmulgee, Okla., to Milwaukee, Wis., a distance of about 1,400 miles including extensions, is the longest pipe line for the transportation of gasoline. The capacity of this line is 30,000 bbls. a day.

Average Price of Crude Oil and Products Since 1925

Could you give the average price of crude oil, gasoline, kerosene and fuel oil for each year since 1925?—S. E. R.

Some quality and locality must be selected for each product when making averages of prices. The relatively small total production and exceptional quality of the oil produced in the Pennsylvania district causes this oil to bring the highest price for crude oil.

The price tables commonly used for crude oil are based on the grade of oil produced in the Mid-Continent area, having a gravity of 36 degrees A.P.I. The U. S. Motor grade will serve for gasoline. The 41-43 degree gravity. W.W. color or 21 Saybolt, is the common grade of kerosene.

The tabulation is for the Mid-Continent district and the prices are the averages of those obtained at the refineries.

AVERAGE PRICES FOR CRUDE OIL AND PRODUCTS

	Crude oil 36° A.P.I.	Gasoline U.S. Motor	Kerosene 41-43 W.W.	Fuel oil 24-36° A.P.I.
Year—	(bbl.)	(gal.)	(gal.)	(bbl.)
1925.....	$1.87	$0.1055	$0.0445	$1.0908
1926.....	2.13	0.1031	0.0727	1.3072
1927.....	1.88	0.0667	0.0461	.9792
1928.....	1.31	0.0795	0.0517	.7694
1929.....	1.37	0.0775	0.0517	.7060
1930.....	1.23	0.0634	0.0358	.7043
1931.....	0.63	0.0346	0.0231	.4256
1932.....	0.88	0.0292	0.0315	.4543

A further explanation should be given concerning the so-called U. S. Motor gasoline. This is a recognized standard of quality as described in the specifications of the Federal Government, and does not include any gravity or knock rating. However, the trade has modified the specification to include gravity and octane rating with the result that there are now three grades of U. S. Motor gasoline, known as regular 60-64 octane number; premium 65 octane number and above; and third grade below 59 octane number. The usual gravity specification is 58-60 degrees A.P.I. In the above table the price averaged is for the third grade or low octane gasoline.

The material given here is based on the report in The Oil and Gas Journal, January 26, 1933, page 64.

Standard Specifications for Fuel Oils Revised

We are informed that the standard specifications for fuel oil have been recently revised and would appreciate it if you will publish them or advise us where they may be obtained.—M. T.

The quality of fuel oils is specified by the U. S. Bureau of Standards in Fuel Oils, commercial Standard CS 12-33, which may be obtained, upon payment of 5 cents, from the Superintendent of Documents, Washington, D. C. There are six grades of fuel oil listed in this publication. The specifications as outlined became effective May 1, 1933.

REQUIREMENTS FOR FUEL OIL 1, 2 AND 3

(All temperatures are degrees F.)

	Flashpoint min.	Flashpoint max.	Water and sediment max.	Pour max.	Distillation 10% max.	Distillation E.P. max.	Distillation 90% max.	
Grade— (see note)	(deg.)	(deg.)	(%)	(deg.)	(deg.)	(deg.)	(deg.)	Visc. max.
No. 1	110	165	0.05	15	420	600	...	.....
No. 2	125	190	0.05	15	440	...	620	.....
No. 3	150	200	0.10	15	460	...	675	55 Saybolt at 100° F.

Note—These are distillate oils for use in burners requiring: No. 1, a volatile fuel; No. 2, a moderately volatile fuel; No. 3, a low viscosity oil.

	Flashpoint min.	Flashpoint max.	Water and sediment max.	Pour min.	Distillation 10% maximum	Distillation E.P. maximum	Distillation 90% maximum	
Grade— (see note)	(deg.)	(deg.)	(%)	(deg.)	(deg.)	(deg.)	(deg.)	Visc. max.
No. 4	150	250	1.0	15	...	...	...	125 Saybolt at 100° F.
No. 5	150	...	1.0	..	...	...	...	100 Furol at 122° F.
			Water with sedmt. not above 2%	Sedmt. 0.25				300 Furol at 122° F.

Note—No. 4, low viscosity fuel; No. 5, medium viscosity fuel (Bunker B, Federal Specification, 2d); No. 6, high viscosity fuel (Bunker C, Federal Specification, 2nd).

Sulphur requirements may be specified as follows:

No. 1, 0.5 per cent; No. 2, 0.5; No. 3, 0.75; No. 4, 1.25; Nos. 5 and 6, no limit.

The minimum flashpoint may be modified to comply with local legal requirements.

The methods for testing these oils are those of the American Society for Testing Materials.

Naphthenic and Paraffinic Hydrocarbons in Gasoline

Are the naphthene hydrocarbons more easily removed by treating with sulphuric acid than the paraffins? What is the relative value of naphthenes and paraffins in gasoline?—N. D.

The early investigators of petroleum thought that the paraffin hydrocarbons were not attached by sulphuric acid but it has been found that all of them, with the possible exception of methane, undergo a change when treated with the concentrated acid, the reaction being greatly accelerated by increasing the temperature. However, the action is very slow at normal temperatures.

The behavior of the naphthenes in the presence of sulphuric acid is similar to that of the paraffins, the oxidation being somewhat more rapid. While the naphthenes as a group have been recognized, there is considerable doubt about the specific ones that may be found in petroleum.

Cyclopentane, cyclohexane and several of their simpler alkyl substituted derivatives have been isolated, such as methyl cyclopentane, methyl cyclohexane, di- and trimethyl cyclohexane. No naphthenes with rings composed of more than six carbon atoms have been definitely identified in petroleum, and there is doubt of their existence in the oil because of insufficient stability. The gasoline naphthenes, therefore, consist of cyclopentane and cyclohexane and of their substitution compounds.

The paraffins present in gasoline are valued for volatility but are liable to have a low knock value. Their properties are closely related to molecular weight, as shown in the rise of specific gravity and boiling point with increase of molecular weight. Within the boiling range of gasoline a comparatively large number of paraffin hydrocarbons may be present.

The naphthenes are considered to be more desirable constituents of gasoline than the paraffins because they have a higher antiknock rating. Naphthenes of the same boiling point as paraffins are heavier, with lower A.P.I. gravities. This is one reason why a high gravity specification may not be relied upon to obtain the better motor fuel.

Reference: Kalichevsky and Stagner, Chemical Refining of Petroleum.

Comparative Heating Costs Kerosene and Other Fuels

Do you have the cost of burning kerosene as a heating fuel and the comparative cost of other fuels under the same conditions? This was published in connection with a stove burner several months ago but I don't remember the title of the article.—F. H. C.

A wickless range burner, of the concentric cylinder type, was described by L. F. Speare and C. B. Cooley before the American Petroleum Institute, Tulsa, May 19, 1933. In the paper the authors presented a table of the heating costs with various fuels. This table is reproduced here.

COMPARISON OF HOT WATER HEATING COSTS—NUMBER OF GALLONS OF HOT WATER FOR $1.

Range oil or kerosene—	Gallons of water
$0.05 per gallon	1,910
0.10 per gallon	1,528
0.12 per gallon	1,272
0.14 per gallon	1,090
0.16 per gallon	955
Anthracite coal—	
$8.00 per ton	1,625
10.00 per ton	1,300
12.00 per ton	1,082
14.00 per ton	924
16.00 per ton	813
Manufactured gas—	
$0.50 per 1,000 cubic feet	1,170
0.75 per 1,000 cubic feet	844
1.00 per 1,000 cubic feet	633
1.25 per 1,000 cubic feet	506
1.50 per 1,000 cubic feet	421
Electricity—	
$0.02 per kilowatt hour	242
0.04 per kilowatt hour	121
0.06 per kilowatt hour	81
0.08 per kilowatt hour	60
0.10 per kilowatt hour	49

The data represent tests conducted on a storage water heater which is operated by a "built-in" range burner, and illustrate the number of gallons of hot water raised in temperature from 60° F. to 140° F. that can be obtained with one dollar's worth of the different fuels at prices shown.

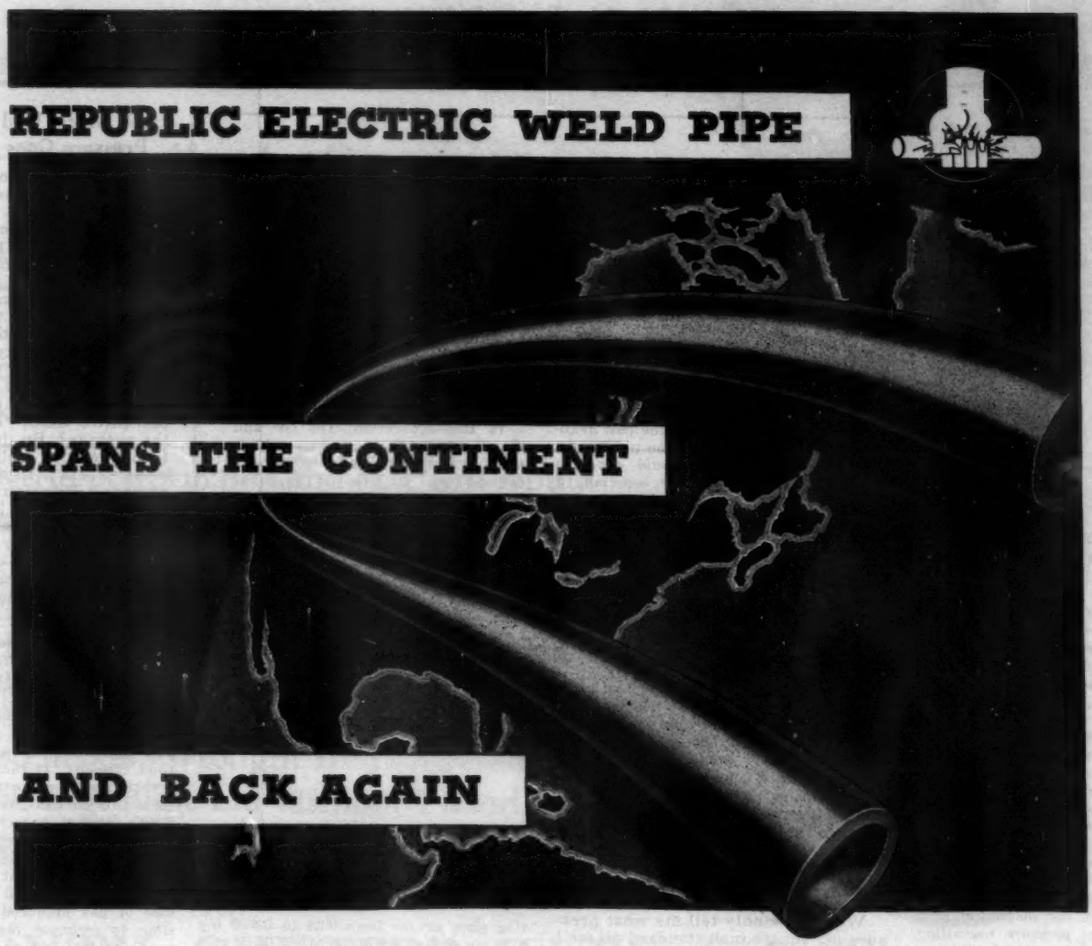
The basic data for the figures in the table are:

Electricity, 95 per cent efficiency: 3,412 B.t.u. per kwh. standard immersion heater.

Manufactured gas, 65 per cent efficiency: 600 B.t.u. per cu. ft. standard side-arm heater.

Range oil, 75 per cent efficiency: 136,000 B.t.u. per gal. storage water heater, with built-in range burner.

Coal (anthracite), 35 per cent efficiency: 12,000 B.t.u. per lb. standard type coal-fired water heater.



WITH a number of companies buying Republic Electric Weld Pipe for installation all over the country, it's just a little difficult to visualize the tremendous mileage that has been placed in service during the last four years—but if it were all in a single line it would span the continent twice. This means that more than 7000 miles of this better pipe is now carrying oil, gasoline and gas to distribution centers.

Republic Electric Weld Pipe was selected in every case because it is a different kind of pipe with many advantages. Flat steel strip is cold formed to a round and welded by electrical resistance. It is uniform in wall thickness, perfectly round, of uniform diameter, and as strong at the weld as at any other point in the wall. It is free from scale inside and out. These qualities mean tighter joints, pipe without thin spots in the wall, faster construction, easier, quicker welding at joints, and no loose scale to clog when liquids are turned into the line.

If you are interested in knowing more about this pipe that has won such wide recognition, write today for the story contained in our Booklet 210-B. The engineering information in it is well worth having on file.

REPUBLIC STEEL
CORPORATION
GENERAL OFFICES: YOUNGSTOWN, OHIO

REPUBLIC *Electric weld*
LINE PIPE • CASING • TUBING

FIELD PROBLEMS FROM READERS

Edited by Thomas F. Smiley

This department is conducted in order that men connected with the drilling, producing or transporting branches of the petroleum industry may obtain aid in solving problems that confront them in their work. Readers are invited to send questions freely. These questions will be placed in the hands of persons capable of answering them authoritatively, and the answers, based on the best available information, will be published.

Each question should give as much detail as possible, especially if it involves depth of sands, types of sands and operations on adjoining or nearby properties. The source of questions will be considered confidential, and only the initials of the sender will be published. Questions involving patented processes, intricate formulas or estimates of cost cannot be answered. If an immediate answer is important, one will be given by mail when the writer requests it.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or improved old ones.

Solubility of Gas in Oil and the Benefits Derived From It

Is it possible for you to give me some information concerning the solubility of natural gas in oil? To what extent is its solubility determined by pressure and temperature? I would be glad to have any facts available concerning the relationship between the gravity of a crude oil and the solubility of natural gas in it.—O. U. R.

The extent to which gas may dissolve in oil and whether the changes such solution of the gas brings about are of material value in the production of the oil are questions which have received and are still receiving extended study. Discussing results of research along this line William N. Lacey, of the California Institute of Technology, said in a paper delivered before the American Petroleum Institute in November, 1932:

"Gases are usually somewhat soluble in liquids, and this solubility increases when the gas pressure is increased or when the temperature is decreased. The increase of solubility is, under most circumstances, proportional to the increase in gas pressure. The extent of solubility of a gas in a given liquid is not predictable without experimental data, although it is true that when the gas is similar in nature to the liquid, the solubility is likely to be higher than for dissimilar substances.

"As an example of the variation of solubility with pressure, experimental results using Santa Fe Springs crude oil, and a sample of dry gas from the same field which is typical of many gases available for repressuring purposes show that the solubility increases proportionally with the pressure. It therefore follows that if benefits result from the dissolving process, the greater the pressure prevailing, the more benefit to be gained. Our results indicate no dropping off of solubility increase, up to the maximum experimental pressure of 3,000 pounds per square inch.

"The differing solubilities of this same gas in a variety of crude oils are indicated by the results shown in Table 1, and will be seen to range from less than 400 cubic feet per barrel to over 500 cubic feet per barrel of oil, the measurements being made at a temperature of 100° F. and at a pressure of 2,000 pounds per square inch. It will be noted that there is some parallelism between the solubility and the A.P.I. gravity of the oil, the higher gravity oils being better solvents for the gas. Except in the case of Santa Fe Springs oil, there is a rough relation which might serve as a first approximation for predicting solubilities of this gas in other oils.

TABLE 1—SOLUBILITY OF SANTA FE SPRINGS DRY GAS IN VARIOUS CRUDES
(At temperature of 100° F. and pressure of 2,000 pounds per square inch)

Source of oil—	Gravity (° A.P.I.)	Solubility (cu. ft. per bbl.)
Sugarland, Tex.	27.1	385
Yates, Tex.	29.9	401
Ventura, Cal'f.	29.5	402
Bartlesville, Okla.	32.7	418
Seminole, Okla.	36.0	437
Santa Fe Springs, Calif.	33.2	454
Lima, Ohio	38.0	464
Bradford, Pa.	45.4	522

"Since composition of the oil affects the solubility of a given area, it would be reasonable to expect that variations in gas composition might also be important. That this is the case is shown by Table 2. Although these figures result from experiments with kerosene as the liquid, they probably indicate roughly the relative solubilities of methane, ethane and propane in other oils.

TABLE 2—APPROXIMATE SOLUBILITIES FOR DIFFERENT GASES

Methane (unity for comparison)	1
Ethane	4½
Propane	21

"It will be seen that the heavier gases are much more soluble than methane, indicating that the composition of mixed gases has a very great effect upon the extent to which solution will take place. This indicates the greater value of rich gases for repressuring purposes as compared to dry gases."

Collapsing Pressures of Casings Vary With Their Thickness

Will you kindly tell me what pressure per square inch standard oil well casing will bear in 6, 8 and 10-inch sizes?—H. H.

A definite answer to your question cannot be given without more complete specifications. Six, eight and ten-inch casing is made in various thicknesses, of different materials and by different methods, in consequence of which its collapsing pressure varies. However, it is likely that the following general information on this subject, quoted from C. J. Coberly's paper before the December, 1929, meeting of the American Petroleum Institute in Chicago, will be helpful to you:

"H. A. Thomas has developed formulas of the same form as those by Stewart, with the exception that the yield point of steel is brought into the relation, making it possible to compute the strength of casing made from material of higher physical properties.

Formula 22—Thick Tubes

$$P = 2.476 \frac{ft}{d} - 0.056f + 574$$

where f = yield point of the steel.

Formula 23—Thin Tubes

$$P = \frac{2.25 \left(\frac{ft^2}{d}\right)}{(0.056f - 574)^2}$$

The dividing line between these two formulas is where:

$$\frac{t}{d} = .034 - \frac{348}{f}$$

The ratio $\frac{t}{d}$ for the present A.P.I. casing sizes ranges from 0.28 to 0.070 for sizes up to and including 13⅜-inch, and from 0.15 to .031 for sizes from 16-inch to 24½-inch.

The factor of Thomas' formula for different grades of steel is given in the following table. Therefore the collapsing strength of all sizes of A.P.I. casing under a diameter of 16 inches can be computed from Formula 22. For 16-inch and over, the $\frac{t}{d}$ ratio should be checked before applying formulas."

A.P.I. grade—	Yield point	$\frac{t}{d}$ — factor
Bessemer welded	30,000	.022
Seamless A	30,000	.022
Seamless B	40,000	.025
Seamless C	45,000	.026
Seamless D	55,000	.028

Based on Professor Stewart's formulas, Professor Thomas' formulas, and the tables of length of string equivalent to collapsing strength and to tensile strength of joint published by A.P.I. the tables on the succeeding pages have been adapted.

Why Was It Called That?

BUTTERFLY VALVE

Butterfly valve is the name applied to certain valves fashioned after the design of a damper in a stovepipe. In pumps the designation indicates a type of double-clack valve consisting of two semicircular clappers or wings hinged to a crossrib in the pump bucket, and thus working like the wings of a butterfly. Butterfly clack, butterfly cock and butterfly damper are other names for the same kind of appliance. Another mechanical device which gets its name from the same winged insect is the butterfly screw or nut.

How Much Will It Yield Before Pressure Goes to 60 Pounds?

I have a problem in the solution of which I cannot seem to find quite the right formula. In a field in the Clinton sand of northern Ohio there are 11 producing gas wells and two dry holes on the edge of the field. I have the logs of all the wells, the original and present rock pressure of each well, and the volume of gas sold up to the present time. I want to estimate the quantity of gas this field will produce till the rock pressure has dropped to 60 pounds. Should I take the average rock pressure for the entire field? How can I figure the average? By this I mean how far from the edge wells toward the dry holes should I figure the production average? How can I estimate for the whole 11 wells? Should I estimate each well individually and total these to get the field or should I average the rock pressure of the field? Will not the total number of wells drilled have some effect on the ultimate production?—J. W. C.

For methods of estimating well capacities you are referred to an article on Page 73 of The Oil and Gas Journal of June 29, 1933.

It is suggested that when this information is computed you take the average well capacity as a basis for the field capacity. If the wells are close together and their capacities fairly uniform this should give an average of the field's present capacity.

Having the capacity of the field at the present pressures and knowing the drop in pressure that has occurred since the field was opened and the total volume of gas produced to date it is possible to estimate the drop in pressure per 1,000,000 feet of gas recovered.

When this drop in pressure rate is found it will be possible to determine how much longer the field will produce at any given daily rate if it is assumed that the pressure drop per 1,000,000 feet will continue at the same rate. This will not be exactly true but it will give an approximate figure for the field's life.

If the acreage is known, also sand thickness and porosity it is possible to apply another formula to determine the quantity of gas remaining in the sand. It is as follows:

Acres × 43,560 square feet × sand thickness in feet × porosity in per cent × present rock pressure + 14.47.

This will give cubic feet of gas still in the pool and to determine how long it will take to recover it any final pressure can be selected and this future pressure substituted in the formula plus atmospheric pressure (14.47 pounds) and the quantity of gas then in the pool will be ascertained. By subtracting the future gas reserve from the present gas in the pool it will be possible to find the quantity of gas to be produced and the number of days will be determined by the daily rate of production.

It is suggested that you write John C. Diehl, Metric Metal Works, Erie, Pa., and submit your problem to him. He has published a "Natural Gas Handbook" which contains information such as you desire.

While some general information is given here, this problem requires the attention of an engineer who is familiar with the field and the data available and can make interpretations based upon his experience.

The Satisfied Customer Uses "Chester" Pipe

He has more than 30 years' knowledge and experience back of the pipe he uses.

The wonderful performance and excellent reputation "Chester" pipe has enjoyed—with its 7-fold inspection—insures him that he is getting the best he can buy. The knowledge that he can get it at 26 strategically located distributing centers insures him prompt service.

Chester also makes "Wrought Iron" pipe—manufactured from genuine old-fashioned hand puddled muck bar made in our own mills from 100% pig iron.

"Good enough" Methods are not Good enough for CHESTER

SOUTH CHESTER TUBE CO., Chester, Pa.

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Los Angeles, Calif.

J. P. Steele
217 Petroleum Building
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1231 S. Evanston Street
Tulsa, Okla.

E. L. Moseley
2218 Mills Street
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Burt S. Shafer, Southwest Representative
4313 Fairfax Ave., Dallas, Texas or
217 Petroleum Bldg., Fort Worth, Texas

District Warehouses: Houston, Texas; Thenard, Calif.; San Francisco, Calif.

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United Pipe & Supply Co.,
Charleston, Danville, West Hamlin, W. Va.; Paintsville, Ashland, Allen, Prestonburg, Kentucky.

Prichard Supply Co.,
Mannington, W. Va.; Mather and Waynesburg, Pa.

LeValley, McLeod, Kinkaid Co., Inc.,
Elmira and Olean, New York

Kane Supply Company
Kane, Lawrenceville, Brookville, Pa.

Bovaird and Company
Bradford, Pa.

Pelican Well Tool & Supply Co.,
Shreveport, La., Kilgore, Texas

Great Northern Tool & Supply Co.,
Billings, and Kevin, Mont., Kemmerer and Cody, Wyo.

Star Drilling Machine Company
550 Clinton Street, Portland, Oregon and Akron, Ohio.

Stephen H. McCabe
508 4th Street
San Francisco, Calif.

Bardo Steel Company
Seattle, Wash., and Portland, Oregon

Union Supply Corp.,
Sulphur, La. and Brimstone, La.

Dunigan Tool and Supply Company
Main Office Breckenridge, Texas; Branch Stores Willow Springs, Pampa, Turnertown, McCamey, Texas and Hobbs, New Mexico.

CHESTER

SPECIALISTS IN CASING FOR DEEP WELL DRILLING

STEEL CASING

LINE PIPE

NEW AND IMPROVED EQUIPMENT

Red Devil Liner Made to Resist Scoring and Wear

Greater resistance to scoring and wear, with consequent longer life to liners and pistons, is said to be one of advantages embodied in Red Devil slush pump liners manufactured by the Oil Well Manufacturing Corp., 6000 South Alameda Street, Los Angeles, Calif. These slush pump

liners are made of Kaloy, an electric furnace special alloy designed to resist abrasion because of extreme hardness resulting from advanced methods of melting and pouring.

According to the manufacturers, Red Devil slush pump liners are heat-treated to a Brinnel hardness of more than 500, or not heat-treated to a Brinnel hardness of more than 230, according to the requirements of the operator. The liners are furnished in suitable lengths for all types of pistons and for any size or make of pump.

Farrell-Birmingham Offers New "Gearflex" Couplings

A new flexible coupling of the gear type, the Farrell "Gearflex," has been introduced by the Farrel-Birmingham Co., Inc., 344 Vulcan Street, Buffalo, N. Y.

The double engagement type consists essentially of two externally geared hubs keyed to the two shafts to be connected and engaging an internally geared floating sleeve which encases the two hubs. With two sets of spur gears, one at each end of the floating sleeve, misalignment is compensated for by the sleeve assuming a neutral position between the two shafts. Thus, all whip or crank action is eliminated, relieving bearings and shafts of heavy pressures or vibration. The use of accurately generated external and internal spur gears, cut on the Sykes gear generating machine, insures precision and distribution of the load over a large number of contact surfaces.

The large reservoir between the hubs and the floating sleeve carries the supply of lubricant. When the coupling rotates, centrifugal force throws the oil to the inner surface of the floating sleeve where it spreads between the gear teeth, entirely immersing the load-carrying surfaces in a bath of oil. The load is carried by the oil film with no metal-to-metal contact between the teeth, thus providing a cushioning effect which gives a high degree of quietness in operation and reduces wear to a minimum.

The Gearflex coupling is also made in a single-engagement type which has only one externally geared hub in engagement with an internal gear in the sleeve, the other hub being solid and the sleeve bolted to it. The single-engagement type is designed to provide a lower-cost coupling for applications where the high-speed capacity and the high degree of flexibility of the double-engagement type are not required.

Both types are available in standard sizes and power ratings.

Portable testing equipment for obtaining desired voltage or current is the subject of a loose-leaf bulletin issued by the General Electric Co.

Among the Equipment Houses

The Struthers-Wells Co., Warren, Pa., manufacturer of chemical process equipment, has appointed the Kerr Machinery Corp., Kerr Building, Detroit, as its exclusive representative in Michigan except in the northern peninsula. It also named the National Equipment Co. of Salt Lake City, Utah, as its representative in Utah, Nevada, Idaho, Montana and Wyoming west of Rock Springs.

—

The Bridgeport Machine Co., Wichita, Kans., has been appointed distributor for the Franklin valveless engines and reverse clutches. The Kilgore, Tex., branch is being stocked with engines to take care of pumping requirements in the East Texas fields and other branch stores will be stocked as rapidly as possible.

S. S. Staley, distributor for Maloney Tank Manufacturing Co. of Tulsa in the East Texas and Conroe districts, recently erected in the Kilgore Field four of the Maloney 10,000-bbl. A.P.I. bolted steel tanks.

—

The Coppus Engineering Corp., Worcester, Mass., has appointed John O. Weber, 122 Main Street, Louisville, Ky., representative for Kentucky, excluding Boone, Kenton, Campbell, Pendleton, Bracken, Mason and Lewis Counties, which will continue to be served from the Cincinnati office. Mr. Weber will have charge of sales of the entire Coppus line of forced draft and ventilating blowers, cooling fans, steam turbines and turbo-generators.

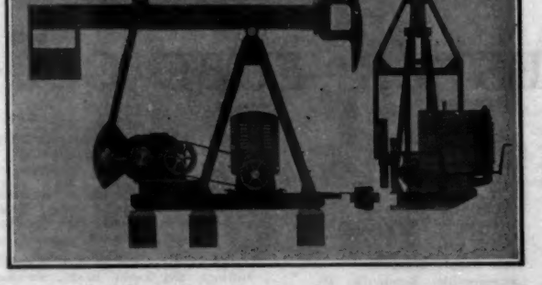
KANSAS OIL AND GAS LAWS

"Kansas Oil and Gas Laws, 1933," a useful booklet for those interested in oil and gas development in Kansas, has been compiled and published by the Bridgeport Machine Co., Wichita, Kans., manufacturer and distributor of oil well equipment, and is being mailed to those who ask for it. Its 74 pages contain the principal lease, production and development, and pipe line laws, including those passed by the last legislature.

IMPROVED EYE PROTECTION

Advances in eye protection for oxy-acetylene welding and cutting have been embodied in the new Oxweld No. 15 welding spectacles and a new lens, Type AA, announced by the Linde Air Products Co., 30 East Forty-second Street. The lenses are mounted in a natural canvas-bakelite frame and are 50 mm. in diameter. This exceptional width permits a wider angle of vision and gives greater protection against light and sparks.

Petroleum Iron Works Develops New Pumping Unit



The Petroleum Iron Works Co. of Texas, Beaumont and Houston, Tex., has placed on the market the new PIW pumping unit, a simple, compact and rigid unit that offers interesting new features.

A special design of horsehead is mounted on the well end of the beam, giving straight-line travel to the polish rod. When servicing the well it is not necessary to move the unit or walking-beam, or to disconnect the pitman, as the horsehead is connected to the walking-beam through a vertical pivot pin and can be swung far enough to give ample clearance for tubing blocks and other servicing equipment.

Accurate counterbalancing is accomplished through counterweighted cranks and adjustable beam weights.

The unit can be operated with gas, gasoline or crude oil engine or electric power, as desired. Power is transmitted to the pitman by a double reduction speed reducer. A multiple V-belt drive is used between electric motor or gas engine and the reduction gear to obtain the desired pumping speed. The reduction gear is provided with a combination brake and flywheel on the high-speed shaft. While a wide range of speed can be obtained by changing drive pulley sizes, the unit was primarily designed for 18 strokes per minute with length adjustment of 24, 32, 40 and 48 inches.

Installation can be made on existing derrick floors.

The unit is readily portable, and has a skid base arranged for dragging the entire unit over rough ground. A large plate on the skid base is provided with holes for attaching the prime mover.

The pitman is of double I-beam construction for connection to the two cranks and is sufficiently stiff to insure against distortion or deflection on the upward stroke.

Every moving part is properly protected by closed bearing and safe lubrication. Pitman bearing is self-aligning and self-oiling. The main rocker bearing on top of the sampson post works in a bath of oil and is sealed at ends of the pin, around bearing and around cap, making the entire bearing weather-tight and dust-proof. The reduction gear is enclosed in oil-tight casing so that a change of oil in the gear case at long intervals is all that is necessary.

Men Well Known in the Equipment Field

C. D. Peterson, named divisional manager for the Fisher Governor Co., Marshalltown, Iowa, will maintain an office in Tulsa in connection with the Smith

C. D. PETERSON

Separator Co., Fisher representative for Oklahoma and northern Texas territory. He will travel through the entire Mid-Continent and Gulf Coast Fields in the interest of Fisher automatic control equipment.

Mr. Peterson is a graduate mechanical engineer of Iowa State College. Following graduation in 1924 he went with Fisher Governor Co. and for the past nine years he has served as mechanical engineer, handling design, operation, service and sales work in connection with the manufacture of automatic control specialties. His training in the engineering details of Fisher controls is expected to prove of special value to the users of this equipment in the territory over which he now has supervision.

Metallic Lead Protective Element in New Lubricant

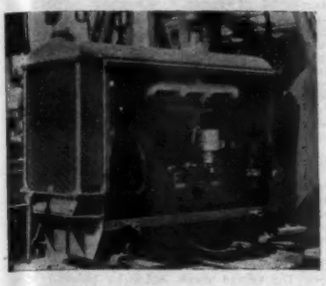
A new lubricant has been developed in which metallic lead is the protective element. The lead has been broken down into such finely divided parts as to be virtually a soluble or liquid lead within a lubricant vehicle. The new product, known as Bestolife, forms a thin protective film of lead on all contacting surfaces which changes such surfaces to a continuous unbroken, antifrictional area, according to the manufacturers, Armite Laboratories of Los Angeles. The lubricant has a pure metallic lead base instead of lead salts and is said to be free from chemical reactions.

The minimum constituency of lead in Bestolife is 10 per cent, ranging up to 65 per cent. This product is said to withstand temperatures up to 430 degrees and not to lose its lubricating stability entirely until the melting point of lead, 500 degrees, is reached. The principal application of Bestolife in the petroleum industry is as a wire line lubricant, for tool joint and pipe dope and for pump

and valve stem packing, plug-cocks, gears, bearings, belt and brakeband dressing. Copies of a bulletin may be had by addressing Armite Laboratories, 1450 East Sixty-first Street, Los Angeles, Calif.

Enterprise Engine Is Built for Use in Pumping Wells

The illustration shows the new Enterprise SG-40 natural gas engine designed and built especially for pumping oil wells, and now in service in California. The installation shown is driving, through a V-belt drive, a No. 5FO Pacific herringbone reduction gear unit on which a



Marsh counterbalance crank is mounted. The engine is equipped with a Pacific spherical bearing pitman and is operating 6,200 feet of three-quarter-inch sucker rods at 24 44-inch strokes per minute, the pump having a 1½-inch net diameter plunger. From 180 to 200 bbls. of oil is being pumped daily from the well.

The engine is a heavy, rugged power unit designed to give long service at minimum cost of operation and upkeep. It is a four-cylinder, four-cycle, valve-in-head type embodying special features to meet the exacting requirements of oil-field service.

The engine is of the marine type in design. It has no removable crankcase, as all reciprocating parts are readily accessible through two large side doors, which permit complete overhauling without removal of the engine from its foundation. All wearing parts are made of materials selected for long, continuous service, but are interchangeable and may be completely replaced in the main engine casting. An extra large flywheel and heavy power take-off assist in smoothness of operation.

Highly effective cooling is accomplished by a large water-jacketed area, a water pump of generous capacity, radiator and fan draft; so that uniform and efficient working temperatures are maintained in the hottest climate. Application of the Enterprise SG-40 engine depends on the equipment already available at the well. Further information regarding the unit and its adaptability to any specific purpose may be obtained from the Rotating Pumper Co., 1333 Santa Fe Avenue, Los Angeles, Calif., exclusive distributor in the petroleum industry.

Oster-Williams Develops "Bulldog" Welding Clamp

Oster-Williams, Cleveland, Ohio, known for years in the pipe threading field, has put on the market a new pipe welding clamp known as the "Bull Dog." The clamp is adjustable for all sizes within its range and is simple in design. It will be made at present in two ranges, one from 4 to 6 inches and the other from 8 to 12 inches. Other sizes will be available in the future.

One lever controls the action of the clamp, making it easy to put on and take off the pipe. It automatically centers the two lengths of pipe to be welded and adjustable screw spacers keep them the correct distance apart for efficient welding. The pipe is held rigidly.

The open construction of the clamp leaves an unusually large amount of space for tacking. Welded steel construction is used to give maximum strength with minimum weight. The 4 to 6-inch tool weighs 18 pounds and the 8 to 12-inch weighs 26 pounds.

Notes About Trade Literature

Along with the current number of the Bridgeport Bulletin, the Bridgeport Machine Co., Wichita, Kans., is sending a circular describing Bridgeport forged-steel rotary drill collars.

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The Leeds & Northrup Co., Philadelphia, Pa., is sending out a bulletin describing the type U testing set for measuring electrical resistance.

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Bulletin 108, prepared by the Amthor Testing Instrument Co., Inc., 309 Johnson Street, Brooklyn, N. Y., describes direct-reading precision hygrometers, recorders and other simple instruments used for determining accurately true air conditions.

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The Lufkin Rule Co., Saginaw, Mich., has prepared a folder describing its new product, tape wiper No. 599, fitting all Lufkin oil gaugers' tapes, which wipes the oil from the line as it is wound on the reel.

—

An interesting article telling about the part played by nickel alloy steel in drilling California's latest deep well, the No. 1 Lillis-Welsh of the North Kettleman Oil & Gas Co., is contained in the August number of Nickel Steel Topics, published by the International Nickel Co., New York.

—

The Bulldog pipe welding clamp is described and illustrated in a circular issued by Oster-Williams, 2057 East Sixty-first Place, Cleveland, Ohio.

—

The Durabilt Steel Locker Co., Aurora, Ill., is sending on request a bulletin telling about its new overhead metal doors, which are not only fire-resistant, but do not warp, crack or splinter.

—

Wilson-Snyder power-driven slush pumps are the subject of a bulletin being distributed by Wilson-Snyder, Pittsburgh, Pa.

—

"What Is This Thing Called 'Entrained Combustion'?" is the title of a 48-page booklet, with illustrations, published for free distribution by the Lee B. Mettler Co., 406 Main Street, Los Angeles, Calif., as Section 2 of its general catalog.

General Electric Makes Explosion-Proof Switch

A new oil-immersed, combination switch, designated as CR7008, has been announced by the General Electric Co. for use in Class 1, Group D hazardous gas locations. The switch is available in three sizes for motors up to 50-horsepower at 440 volts. It is suitable for use in oil refineries, chemical houses, and in other places where it might be exposed to corrosive and explosive gases. As the device is of weather-proof construction, it may be located outdoors if necessary.

The combination switch consists essentially of three parts, a magnetic switch, a motor circuit switch, and a thermal overload relay which is reset by a plunger extending through the top cover. These parts, together with all connections, are located 6 inches below the surface of the oil in an oil-filled tank of welded construction. The tank, which is welded from heavy sheet steel, is supported from the top cover by four wing bolts. Handles on the sides of the tank facilitate its removal.

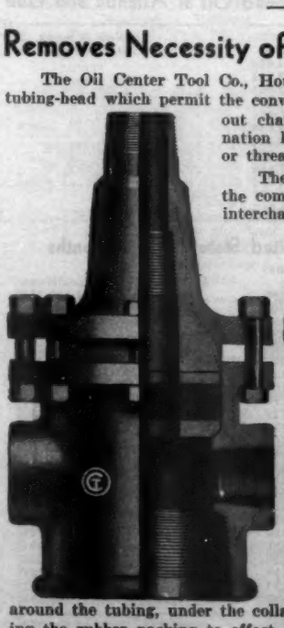
Pump Is Designed to Give More Power at Less Cost

More power at less cost is realized in the Uni-V-Pump, according to the manufacturer, the Uni-V-Pump Co., First National Bank Building, Dallas, Tex. The application of power which actuates the walking beam to lift the load is effected through a V-shaped structure, one leg of which is in compression supporting part of the load while the other leg is in tension lifting the load through a maximum use of the principle of the lever.

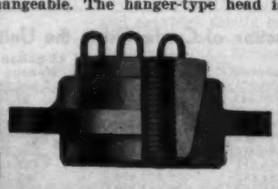
Advantages of this unit as enumerated by the manufacturer follow: V-type power application. No vibration. Extra length leverage multiplies power. Straight lift on rods and counterbalance. Counterweights quickly and easily changed. Hinged horse's head simplifies servicing well. Power unit farther from well minimizes fire hazard. Two wells can be pumped with one unit. Structure scientificially designed, strong, substantial, well braced, electrically welded. Highest type self-aligning bearings used. Gear reducer is noiseless and powerful. Minimizes power costs.

Removes Necessity of Entirely Changing Tubing-Head

The Oil Center Tool Co., Houston, Tex., has made changes in its hanger-type tubing-head which permit the conversion of a flowing well to a pumping well without changing the complete tubing-head. This new combination head allows the hanging of tubing on either slips or threads.



The hanger-type head now conforms to the design of the company's slip suspension head so as to make parts interchangeable. The hanger-type head is commonly used when the well is flowing. Now, with the new design, the slip bowl and slips fit the same head, using the same packing, when the well is put on the pump.



The new design is of full throat type, allowing the tubing catcher to pass through.

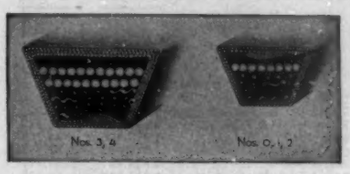
For pressures up to and including 3,000 pounds the head is made of cast chrome-nickel steel, and for 4,000-pound, 5,000-pound and 6,000-pound pressures it is made of forged steel.

Design and material of the packing unit in this head serve as a safety factor against dangerous pressures. If the well "kicks" while tubing is being run, the packing unit is placed around the tubing, under the collar, and the tubing is lowered, its weight compressing the rubber packing to effect a seal.

Improved Goodyear V-Belt Announced by Worthington

A new and improved type of Goodyear Emerald cord V-belt is announced by the Worthington Pump & Machinery Corp., Harrison, N. J., in connection with the Worthington Multi-V-Drive.

High power capacity, long flexing life, uniform cross section and low stretch were the primary factors considered in designing the new belt. A basic feature is a greater concentration about the neutral axis of the belt of the load-carry-



ing capacity. Nos. 0, 1 and 2 sizes have one endless cord in one plane, and Nos. 3 and 4 sizes have two endless cords in two planes. All cords are completely embedded in rubber, thus affording full insulation for the control of internal heat.

The tension and compression sections of the belt are composed of rubber, with layers of fabric distributed through the compression section to prevent excessive flexibility.

The belt is molded to shape, and is completely enclosed in a fabric envelope which protects the working elements and provides a good contact surface for the V-grooved sheave. The fabric for the envelope is so cut that the threads run on the "bias." This prevents the envelope from taking any part of the load, thus protecting it from rupture. The envelope is "flipped" on the belt (not spiraled) and is so placed that the edges overlap on the top or bottom of the belt (not on the sides). This produces a smooth, unbroken surface on the contact faces and eliminates the possibility of fraying, even after prolonged use. The new belts are now being furnished on all Worthington Multi-V-Drives.

Coffing Hoists Found of Great Help in Oil Field

Coffing hoists, with capacities ranging from three-quarters of a ton to 6 tons, weigh from 14 to 65 pounds. These hoists are said to have been found especially valuable in the oil fields on account of their portability. They are used for picking up rod lines to wells; loading trucks; skidding engines, boilers and any cumbersome equipment into place; in the erection of rigs and wherever a lift or pull is needed. The Coffing Hoist Co., Danville, Ill., which makes these hoists, has jobbers in most of the large cities.

AUTOMATIC OILERS ANNOUNCED

The Speedway Manufacturing Co., Cicero, Ill., maker of portable electric tools, announces a line of automatic oilers to be known as Speedway oilers. These oilers are of two types, "constant level" and "thermal." The constant level oilers are designed especially for use on electric motor bearings and other reservoir bearings with oil ring packing, or ball or roller bearings where oil in the reservoir should be maintained at a determined level. This is done by means of a tube which permits air to enter and oil to flow from the reservoir when the level of oil in bearing reservoir drops below the fixed and proper level, automatically stopping the flow of oil when this level is attained. The thermal oilers, designed for use on sleeve bearings of the open type, are operated wholly by change in the bearing temperature. Heat in the bearing causes an expansion of the air in the thermal chamber, forcing small quantities of oil, just enough, to the bearing. Both types of oilers have a visible oil supply.

The Smith Separator Co., Tulsa, has been appointed Mid-Continent representative for the Fisher Governor Co. of Marshalltown, Iowa, manufacturer of regulating and control devices.

Oklahoma-Kansas and Eastern Monthly Pipe Line Report

OKLAHOMA-KANSAS
Pipe Line Statement for May

RUNS

Company—	Month (bbls.)	Dly av. (bbls.)
Gulf P. L. Co.	1,751,403	56,497
Texas P. L. Co.	559,250	18,041
Empire P. L. Co.	2,701,351	87,140
Magnolia P. L. Co.	972,433	31,369
Cosden P. L. Co.	606,858	19,576
Stanolind P. L. Co.	2,232,000	72,000
Oklahoma P. L. Co.	1,912,161	61,682
Other lines	5,896,000	190,000
Total May	16,635,456	536,305
Total April	15,552,198	518,407
Difference	1,073,258	17,898

SHIPMENTS

Gulf P. L. Co.	1,216,335	39,236
Texas P. L. Co.	1,240,522	40,017
Empire P. L. Co.	2,558,354	82,528
Magnolia P. L. Co.	1,077,655	34,763
Cosden P. L. Co.	727,095	23,452
Stanolind P. L. Co.	3,824,687	123,377
Oklahoma P. L. Co.	1,913,893	61,739
Other lines	6,107,000	197,000
Total May	18,665,441	602,112
Total April	18,191,505	606,384
Difference	473,936	4,272

STOCKS

Sinclair Oil Marketing Co.*	38,532,000
Gulf P. L. and Gypsy Oil Co.	7,188,021
Texas Co.	2,431,025
Empire P. L. Co.	4,486,955
Mid-Continent Petroleum Corp.	2,079,246
Stanolind Crude Oil Pur. Co.*	13,295,000
Magnolia Petroleum Co.	7,039,200
Oklahoma P. L. Co.	899,725
Carter Oil Co.	2,623,671
Other lines	19,593,000
Total May	90,085,843
Total April	92,587,390
Difference	2,501,547

*Estimated. Stanolind Pipe Line Co. shipments include Texas crude oil.

EASTERN PIPE LINE REPORT FOR MONTH OF JUNE

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky, Illinois, Indiana and Michigan for May and June:

	May, 1933	June, 1933
Nat. Transit	243,156.35	270,263.43
S.W. Pa. P. L.	62,644.24	68,914.75
Eureka P. L.	250,116.77	256,965.28
Buckeye P. L. (Macksburg)	220,297.83	222,257.13
Buckeye P. L. (Cleveland)	8,920.91	9,391.35
Buckeye P. L. (Lima, etc.)	64,532.08	73,624.86
Indiana P. L.	695.60	655.40
Stoll Oil Ref.	26,420.00	21,958.26
Bradford Trans.	397,096.78	384,731.68
N. Y. Transit	30,965.35	31,311.03
Tide Water P. L.	24,799.31	25,407.79
Pure Oil	428,736.97	375,581.37
Daugherty Ref.	577.00	616.00
Valvoline Pipe	71,447.26	68,980.05
Other companies	208,019.68	210,519.23
Total	2,038,428.13	2,021,120.71
Daily average	65,755.75	67,370.69

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for May and June:

	May, 1933	June, 1933
Nat. Transit	545,116.94	606,943.97
S.W. Pa. P. L.	451,255.97	421,204.00
Eureka P. L.	253,424.60	263,272.03
Buckeye P. L. (Macksburg)	253,868.25	217,230.34
Buckeye P. L. (Cleveland)	1,462.82	1,453.98
Buckeye P. L. (Lima, etc.)	1,579,982.98	1,625,099.81
Indiana P. L.	951,287.63	1,099,519.92
Bradford Trans.	385,472.09	431,437.99
Southern P. L.	40,802.96	
Tuscarora	283,673.40	173,661.36
N. Y. Transit	178,587.66	181,799.16
Northern P. L.	151,384.10	175,204.20
Tide Water P. L.	493,837.03	468,821.27
Pure Oil	433,795.19	438,695.86
Valvoline Pipe	28,666.21	60,139.43
Other companies	156,272.19	173,538.67
Total	6,189,824.32	6,359,426.99
Daily average	199,671.75	211,980.89

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of May and June:

	May, 1933	June, 1933
Nat. Transit	551,884.51	495,594.28
S.W. Pa. P. L.	391,998.84	344,235.39
Eureka P. L.	927,522.86	890,290.80
Buckeye P. L. (Macksburg)	293,102.34	313,071.25
Buckeye P. L. (Cleveland)	33,384.45	38,066.11
Buckeye P. L. (Lima, etc.)	2,222,702.46	2,193,477.36
Indiana P. L.	506,374.87	474,406.69
Bradford Trans.	340,988.75	299,398.86
Southern P. L.	125,143.61	124,347.92
Tuscarora	8,206.38	7,807.56
N. Y. Transit	65,713.73	89,182.42
Northern P. L.	257,612.40	231,299.86
Tide Water P. L.	762,341.31	808,965.21
Pure Oil	242,358.14	189,375.69
Valvoline	149,094.44	129,736.60
Other companies	137,698.51	136,682.22
Total	7,016,621.63	6,766,038.22
Decrease	195,927.13	250,583.40

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of May and June, showing gross stocks of the above fields:

	May, 1933	June, 1933
Pennsylvania	2,900,035.64	2,726,911.68
Lima	424,603.63	429,927.14
Kentucky	299.42	299.42
Mid-Continent	3,528,298.05	3,471,098.63
Illinois	13,806.54	12,918.30
Michigan	149,578.35	124,883.01
Total	7,016,621.63	6,766,038.22

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1930	1931	1932	1933
Jan.	75,907	53,939	53,501	64,493
Feb.	79,256	55,163	55,498	58,140
Mar.	76,683	54,331	57,199	59,417
Apr.	84,536	54,914	57,348	61,812
May	70,546	53,344	58,165	65,755
June	75,430	54,110	64,371	67,370
July	68,921	56,723	63,402	
Aug.	54,291	51,503	67,676	
Sept.	56,595	61,345	65,423	
Oct.	58,179	65,595	65,960	
Nov.	52,332	59,819	60,602	
Dec.	53,999	61,835	57,401	

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1930	1931	1932	1933
Jan.	217,623	175,269	156,551	198,996
Feb.	224,355	183,494	169,356	187,928
Mar.	228,846	189,508	188,793	183,632
Apr.	241,845	191,450	202,036	181,940
May	248,383	199,247	201,404	199,671
June	234,401	221,155	201,632	211,980
July	207,094	211,632	202,859	
Aug.	205,506	224,166	187,839	
Sept.	193,999	217,537	170,524	
Oct.	157,675	210,831	188,504	
Nov.	146,638	196,425	189,626	
Dec.	143,001	176,241	186,135	

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1931	1932	1933
Jan.	11,831,092	9,023,914	7,608,270
Feb.	11,506,489	8,974,350	7,303,746
Mar.	11,012,162	8,802,192	7,379,843
Apr.	11,044,481	8,908,461	7,312,548
May	10,728,239	8,835,726	7,016,621
June	9,903,349	8,732,724	6,766,038
July	9,569,849	8,176,956	
Aug.	9,192,457	8,128,576	
Sept.	8,492,431	7,895,421	
Oct.	8,417,694	7,421,620	
Nov.	8,330,386	7,116,200	
Dec.	9,119,032	7,139,420	

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

	Bbls.
Gross stocks, July 1	550,999.85
Runs from wells	395,458.04
Other receipts	53,669.51
Regular deliveries	325,300.96
Other deliveries	77,476.30

The amount of Illinois oil run by the Tide Water Pipe Co. in June was 25,407.79 bbls. Deliveries were 25,683.40 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1933—	Runs	Deliveries
June	420,865.87	350,984.36
1932—		
January	500,177.12	246,634.10
February	482,561.50	186,010.30
March	565,528.70	270,617.75
April	461,920.92	285,817.98
May	521,884.64	279,859.88
June	501,878.26	263,703.70
July	466,635.89	284,527.18
August	476,095.53	307,325.89
September	436,529.00	329,994.39
October	332,680.67	352,620.34
November	346,880.27	338,351.23
December	336,072.57	317,749.63
1931—		
January	344,054.84	314,108.93
February	306,520.61	294,340.35
March	385,665.57	314,514.48
April	311,146.72	350,455.50
May	361,901.38	334,420.38

Tide Water Pipe Co., Ltd., also delivered in June 89,204.71 bbls. Oklahoma oil.

Average Daily Imports of Crude and Refined Oil at Principal United States Ports

Average barrels per day in 1932-33—	Atlantic Ports: Baltimore	Boston	New York	Philadelphia	Others	Total	Gulf Coast Ports: Galveston	New Orleans, Baton Rouge	Port Arthur, Sabine Pass	Tampa	Total	Total all ports
June	39,900	11,700	199,300	22,733	29,900	294,533	.....	.....	12,867	.....	12,867	307,400
July	2,613	2,161	63,548	14,935	2,129	84,806	.....	.....	.....	.....	.....	84,806
August	3,323	3,161	72,678	25,613	2,098	106,871	.....	.....	.....	.....	.....	106,871
September	5,100	2,300	57,900	12,167	10,066	87,433	.....	.....	.....	.....	.....	87,433
October	14,033	.....	72,193	30,645	7,129	124,000	.....	.....	.....	.....	2,000	126,000
November	14,167	.....	49,967	19,333	8,900	92,367	.....	.....	.....	.....	2,133	94,500
December	14,268	2,065	84,322	28,162	9,256	138,064	.....	.....	.....	.....	5,226	143,290
January	7,644	4,355	64,194	25,710	6,613	108,516	.....	.....	.....	.....	548	109,064
February	7,482	4,789	120,490	12,610	10,822	156,393	.....	.....	.....	.....	2,357	158,750
March	7,710	4,290	101,258	36,292	16,000	165,290	.....	.....	.....	.....	.....	165,290
April	10,000	6,700	73,433	32,267	9,967	132,367	.....	.....	.....	.....	.....	132,367
May	4,258	2,194	62,484	22,548	3,355	94,839	.....	.....	.....	.....	4,355	99,194

Average Daily Receipts of California Crude and Refined Oil at Atlantic and Gulf Ports

Average barrels per day in 1932-33—	Atlantic Ports: Baltimore	Boston	New York	Philadelphia	Others	Total	Gulf Coast Ports: Galveston	New Orleans, Baton Rouge	Port Arthur, Sabine Pass	Tampa	Total	Total all ports
June	2,500	.....	17,333	3,933	833	24,600	.....	.....	.....	.....	.....	24,600
July	3,323	.....	22,226	8,677	8,935	42,161	.....	.....	.....	.....	.....	42,161
August	4,452	.....	22,484	7,548	7,677	42,161	.....	.....	.....	.....	.....	42,161
September	2,900	.....	5,000	11,633	7,967	27,500	.....	.....	.....	.....	.....	27,500
October	3,387	1,226	14,452	9,355	9,193	36,613	.....	.....	.....	.....	.....	36,613
November	4,667	.....	21,700	7,767	2,366	36,500	.....	.....	.....	.....	.....	36,500
December	4,129	.....	15,678	5,322	8,226	33,355	.....	.....	.....	.....	4,903	38,258
January	968	.....	30,903	3,742	10,064	45,181	.....	.....	.....	.....	.....	45,181
February	9,196	1,643	14,250	10,965	11,500	47,454	.....	.....	.....	.....	2,642	50,167
March	5,065	.....	16,516	9,968	13,935	45,484	.....	.....	.....	.....	7,484	52,968
April	6,000	.....	14,500	7,733	4,934	33,167	.....	.....	.....	.....	4,900	38,067
May	4,194	.....	15,255	14,293	5,871	39,613	.....	.....	.....	.....	4,452	44,065

Gross Production of Crude Oil in the United States for 12 Months

(In barrels of 42 gallons)

1932-33—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts.	Eastern	Total
July:	Month	14,627,550	13,030,571	26,946,714	2,906,808	1,060,386	1,932,757	2,554,648	3,723,000	66,783,434
	Daily average	471,856	420,341	869,245	93,768	34,206	62,379	82,408	120,097	2,154,304
August:	Month	14,839,951	12,743,666	26,924,953	3,046,959	1,062,897	1,870,764	2,413,536	3,872,000	66,775,726
	Daily average	478,708	411,086	868,547	98,289	34,287	60,347	77,856	124,935	2,154,056
September:	Month	14,351,140	11,705,280	27,366,515	2,970,750	1,019,250	1,929,161	2,289,300	3,918,000	65,249,396
	Daily average	478,371	390,176	912,217	99,024	33,975	64,305	76,310	130,599	2,174,980
October:	Month	14,627,663	11,915,811	27,213,832	2,892,486	1,019,931	1,963,062	2,254,444	3,814,000	65,701,230
	Daily average	471,860	384,381	877,866	93,306	32,901	63,325	72,724	123,032	2,119,394
November:	Month	14,142,389	11,340,930	26,155,652	2,841,780	1,020,600	1,962,943	2,169,685	3,678,000	63,211,979
	Daily average	471,413	378,031	871,855	94,726	34,020	65,431	72,323	119,267	2,107,066
December:	Month	14,595,028	11,637,171	23,487,818	2,777,879	1,037,539	1,966,481	2,067,855	3,694,000	61,263,771
	Daily average	470,807	375,393	757,672	89,609	33,469	63,435	66,705	119,161	1,976,251
January:	Month	14,460,282	12,550,784	26,115,932	2,871,282	993,457	2,021,117	2,241,610	3,112,000	64,366,464
	Daily average	466,461	404,864	842,449	92,622	32,047	65,197	72,310	100,387	2,076,338
February:	Month	13,107,043	12,570,992	25,092,383	2,801,512	830,208	1,793,443	2,096,612	2,747,000	61,089,193
	Daily average	468,109	448,964	896,156	100,054	31,436	64,051	74,879	98,011	2,181,757
March:	Month	13,414,980	15,455,236	24,243,444	3,604,539	943,702	2,070,695	2,371,469	3,118,000	75,221,065
	Daily average	432,741	498,556	1,104,595	116,276	30,442	66,797	76,499	100,581	2,426,486
April:	Month	14,263,943	11,730,010	27,306,582	3,492,990	909,120	2,156,736	2,209,470	3,017,000	65,074,851
	Daily average	475,431	390,667	910,219	116,433	30,304	71,891	73,649	100,567	2,169,162
May:	Month	14,817,632	13,521,580	49,151,776	3,277,102	928,687	2,116,296	2,294,558	2,177,000	89,284,613
	Daily average	477,988	436,180	1,585,541	105,713	29,957	68,268	74,018	102,161	2,880,149
June:	Month	14,344,654	14,339,070	29,907,737	3,210,150	901,770	2,009,831	2,239,650	3,057,000	80,009,862
	Daily average	478,155	477,969	1,330,256	107,035	30,059	66,994	74,655	101,900	2,666,995
	Total 12 months	171,591,256	152,531,161	359,912,338	36,694,238	11,777,527	23,794,287	27,292,827	40,528,000	824,031,584
	Daily average	470,113	417,893	986,061	100,532	32,267	65,189	74,528	111,036	2,257,621

CLASSIFIED ADVERTISING

Classified Rates

The rates for Classified Advertisements are 35 cents a line for the first insertion and 25 cents a line for each additional insertion. The following table will enable you to figure the cost of your advertisement:

	1 time	2 times	3 times	4 times
3 lines	$1.05	$1.80	$2.55	$3.30
4 lines	1.40	2.40	3.40	4.40
5 lines	1.75	3.00	4.25	5.50
6 lines	2.10	3.60	5.10	6.60
7 lines	2.45	4.20	5.95	7.70
8 lines	2.80	4.80	6.80	8.80
9 lines	3.15	5.40	7.65	9.90
10 lines	3.50	6.00	8.50	11.00

Six words usually constitute a line.

Compute white space at the above rates.

For rates on Classified DISPLAY see opposite column.

Mail your Classified Advertisement to THE OIL AND GAS JOURNAL Tulsa, Oklahoma.

For Sale—Equipment

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air Compressor. Six-inch Oster Pipe Threading Machine. Also, large stock of lathes, pipe machines, milling machines, etc. Send for our list. Terms to suit.
CINCINNATI MACHINERY & SUPPLY CO.
26 West 2nd St. Cincinnati, Ohio.

55,000 OR 66,000-BBL. TANKS
Will move and re-erect on your grade one or more steel roof storage tanks, practically new, anywhere in United States at great saving. If you have crude oil, fuel oil, gas oil or gasoline we can build the storage.
SONKEN-GALAMBA CORPORATION
64 North Second St., Kansas City, Kans.

Interested in Purchasing Pipe Lines, Refinery Equipment, and waste material or what have you.

10 TO 165 HP Gas and Oil Engines, Commercial or Oil Country types; Reversing and Straightaway clutches. Air compressors, direct connected or belt driven. All equipment rebuilt and guaranteed. Write or wire us your requirements. Inland Iron Works Co., Okmulgee, Oklahoma.

EQUIPMENT FOR SALE
We purchased all the pumping equipment of the Sinclair pump station at Teapot Dome, including two 600-H.P. McIntosh and Seymour Diesel engines with direct connected high pressure Worthington pump, buildings, water towers, pipe, valves, etc. Will sell all or any part. All equipment plant erected in 1923 and out of service in 1927. Everything guaranteed A-1 condition. Wire or write Contractors Machinery Company, 2645 Southwest Blvd., Kansas City, Mo., or W. C. Berry, 64 North Second St., Kansas City, Kansas.

ONE 165 H.P. Type 10 Bessemer Direct Driven Compressor in good running condition. Also 2 spare power cylinders. Bargain. Nolan Sales Corp., Tulsa.

FOR SALE OR LEASE
50 Insulated 8,000 gallons, clean tank cars. General American make.
THE HENDERSON COMPANY
818 McBirney Bldg.,
Tulsa, Oklahoma.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

Patent Attorneys

REGISTERED PATENT ATTORNEYS
United States and Canada
Before disclosing your invention to anyone, send for blank form:
"Evidence of Conception,"
Instructions "How to Establish Your Rights" and complete information FREE!
LANCASTER, ALLWINE & ROMMEL
418 Bowen Building,
Washington, D. C.

Financing

JAMES E. MILLER CO., 207½ E. Third St., Tulsa, Okla., will co-operate with responsible parties seeking aid in financing projects of higher order.

Established organization with record of successful accomplishment offers immediate action in financing of sound projects.
HENRY W. BENSON ASSOCIATES, INC.
92 Liberty Street, New York, N. Y

Help Wanted

WANTED—Experienced salesman of refined oil products, Standard Indiana territory, liberal commission basis. Kendrick Oil Company, Tulsa, Oklahoma.

Situations Wanted

PATENT ATTORNEY—GRADUATE ENGINEER—(M.E., Ph.D.). Ten years technical experience. Five years patent experience including oil. Desire position directing research providing patent protection. Box F-763, The Oil and Gas Journal, Tulsa, Oklahoma.

BREWERY ENGINEER
American, experienced in design, construction and operation complete brewing and malting plants, estimator and negotiator, biochemical and processing research, seeks connection as technical assistant to capital, contracting engineers or equipment manufacturer established or entering field. Write Box F-773, The Oil and Gas Journal, Tulsa, Okla.

EXECUTIVE. Wide, practical experience all phases. Drilling, production, equipment, organization; well educated; active, progressive; middle aged; married. Address Box F-740, The Oil and Gas Journal, Tulsa, Okla.

Royalties—Production

BETTER CLASS
MONTHLY INCOME ROYALTIES
W. E. Cook, Court Arcade, Tulsa, Okla.

ROYALTIES FOR INVESTMENT
Andrew J. Barrett,
Suite 1903, The Philtower,
Tulsa, Okla.

HIGH GRADE producing oil and gas royalties offered to dealers. Billie Smallwood, P. O. Box 2261, Tulsa, Okla.

PRODUCING OIL ROYALTIES
in Fractional deeds from $100 up.
John L. Dickson, Box 1113, Tulsa, Okla.

ROYALTIES
Kansas—Oklahoma—Texas
Always handle the best.
TULSA, OKLAHOMA
217 Cole Building
L. H. Witwer.

Royalties—Production

APPRAISALS & REPORTS
ON OIL, GAS & ROYALTY PROPERTIES BY—F. W. FREEBORN ENGINEERING CORP. 20 Years Mid-Continent Fields.
Alexander Bldg., Tulsa, Okla.
Phone 4-6938.

ROYALTIES CAREFULLY SELECTED
Oklahoma — Kansas — Texas
G. D. TERRIEN
Philcade Building, Tulsa, Okla.

JAMES B. McANALLY

Hunt Building, Tulsa, Oklahoma.

An organization backed by twenty years' practical oil experience, supplying well selected royalties to dealers only, who are interested in building satisfied clienteles.

PRODUCING OIL ROYALTIES
Bought and Sold.
Inquiries invited from Oil Companies, Bankers, Dealers.

DAVID R. MITCHELL & CO.,
Established 1916.
20 BROAD ST. NEW YORK.

ROYALTIES for dealers, producing, nonproducing Oklahoma, Kansas, Texas, Louisiana. Lowest prices and highest quality. James R. Haynes, Grantville, Kans.

PERPETUAL DEEDED ROYALTIES
Your selection of over 400,000 acres. Some major company blocks. H. H. White, Box 674, San Antonio, Tex.

SELECTING OIL ROYALTIES
for dealers a specialty.
Kansas-Oklahoma City-Seminole.
Chester Imes,
First National Bank Building,
Oklahoma City, Okla.

CHOICE INCOME OIL ROYALTIES
Kansas and Oklahoma, for investors and dealers. J. L. HANER, 105 McKibbin Bldg., Muskogee, Okla.

TEXAS ROYALTIES ahead of development. Perpetual Mineral Deeds. Low Prices. Attractive Buys. Dealers and Salesmen protected territory. Wm. T. Earnest, Drawer 2177, Dallas, Texas.

Leases—Production

SOUTHWEST LOUISIANA acreage, large or small blocks, good oil prospects, for lease by owner to responsible parties on drilling contract.
S. Arthur Knapp, Lake Charles, La.

EVERY MAN dealing in Texas leases and royalties should get quotations, maps and prices here. Dealers' territory protected. W. J. Dobbs, 915 Tower Pet. Bldg., Dallas, Tex.

WANTED—GOOD USED EQUIPMENT

The demand for used equipment (in good condition) far exceeds the available supply.

If you are one of the few who have idle equipment and you want to dispose of it, a buyer is waiting to contact you. Let him know through these columns. The accepted medium for bringing buyer and seller together for over thirty years.

Classified Department

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma.

Display Rates

The rate for Classified Display Advertising set in similar style to this Ad or in two-Column style is as follows for each insertion:

1 inch	1 time	$5.00
1 inch	13 times	4.50
1 inch	26 times	4.00
1 inch	52 times	3.50

Rates for Classified without display shown on opposite column.

One point borders and ten point capitals are allowed, larger type not accepted.

Changes in copy must be in our office 10 days in advance of publication date.

Mail your advertisement to the Largest Classified Section in the Oil Industry.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma.

Leases—Production

NEW MEXICO Oil and Gas Leases and royalties. Send 50 cents in stamps for new State Oil Map of New Mexico. Roy G. Barton, Clovis, New Mexico.

BROKERS—Well located leases and perpetual royalties at wholesale prices, small and large tracts. Write A. C. Smith, P.O. Box 927, Houston, Texas.

WRITE for particulars; experienced leaseman; knows geology; can identify surface structure; employs latest energy instrument in determining saturation of folds, faults, or lensing. Arthur Nickell, Fayette, Missouri.

FOR SALE—Approximately 1,400 acres Proven Gas and Oil Leases 4 deep gas wells. High Rock Pressure, High Quality B.t.u. test. Gas Franchises and plants two towns. Contract to furnish gas two other towns; 50 H.P. Bessemer Gas Engine (like new) Myers Water Pump 6x8 stroke, Ingersoll Rand 20x12 twin Compressor, Shaft, 1 belt, 300 gal. High Pressure Tank, Scrubbing tank, Absorption stand, other equipment used in manufacturing casinghead gas. For detailed information write Mrs. Kathryn Sproul, Sedan, Kansas, Owner.

Ranches—Farm Lands

2,364 ACRES richest upland, creek bottom, highly improved, gravel road, 6 miles county seat. Ideal farming-stock-raising. Genuine oil prospects. $25,000. Terms. Barbour Realty, Vicksburg, Miss.

Business Opportunities

WANTED—Capital for Aeronautic project of unusual merit. About half million needed. Prefer a few large subscriptions. Details and credentials on request, Box F-780, The Oil and Gas Journal. Tulsa, Oklahoma.

WANTED lease drilled on proven Colorado oil structure; offsetting wells have produced 245,000 barrels in 5 years; depth 3,000 feet. C. T. Ahlstrand, Greeley, Colo.

Wanted

BIDS WANTED from drillers, on cash basis, or cash and interest, or all interest, to drill well on the west eighty acres of the N. W. ¼, Section 18-14-4E, Lincoln County, Okla. E. W. Kreitner, Belleville, Illinois.

Incorporations

CHARTERS—Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

DELAWARE CHARTERS—Fees small, free forms. CHAS. G. GUYER, 901 Market St., Wilmington, Del.

B PRODUCTS for pumping wells
The KEY to LOWER LIFTING COSTS
CORRECTLY DESIGNED ECONOMICALLY PRODUCED
REASONABLY PRICED

Made for extra severe service
B-M-W
MONARCH
Ball & Seat

Extraordinarily non-corrosive — much harder than other non-corrosive balls and seats. Resists cutting action of sand and eliminates troubles of ball breakage.

Made with precision machinery — to B-M-W exacting requirements. Test out the MONARCH under severe service—note how it stands up and delivers.

At all good Supply Stores.

BRADFORD MOTOR WORKS INC.
OIL WELL SUPPLIES
BRADFORD, PA. TULSA, OKLA.
EXPORT OFFICE—30 CHURCH ST.—NEW YORK CITY

CONSTANT

research in field and laboratory, the use of superior crude oils, and the most modern refining equipment are the three stones in the foundation upon which Humble quality has been built.

HUMBLE
OIL AND REFINING COMPANY
HOUSTON, TEXAS
Producers, Transporters, Refiners and Marketers of Petroleum and Its Products.

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